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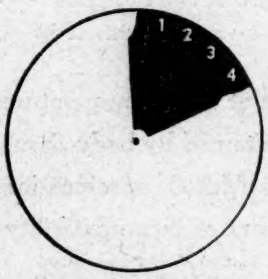

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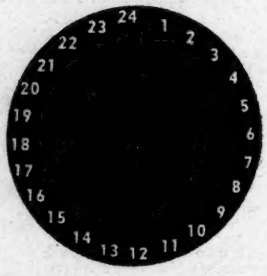

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An Address.[1]

By SHOLTO J. DOUGLAS,

Retiring President of the South Australian Branch of the British Medical Association.

THIS address may be regarded by some as combining the moral platitudes of a nineteenth-century sermon to schoolboys with the smug self-righteousness of a discarded politician.

May I begin by saying that I am embarrassingly aware of my own shortcomings and those of my address. If I preach, it is because the last year has shown me the need of preaching and has caused me to examine the beam in my own eye as well as the mote in my colleagues'. It is all too easy to stray from the path of professional rectitude, and I venture to say that there are few here tonight who are entirely conscience-free in this matter.

Do not, I beg, in my later remarks, take it that I am casting the first stone; or indeed, that I am casting any stone at any individual. My comments are general, not particular.

It is necessary to my purpose to give a brief history of ethical concepts in different times and places.

The earliest recorded instance of a code of laws governing medical practice takes us back to Babylon about 2000 B.C. I find the authorities differ as to the date—from 2250 B.C. to about 1900 B.C. This is the renowned Code of Hammurabi, combining laws relating to property, marriage, criminal acts *et cetera*, and laying down conditions of medical practice. A schedule of fees is proclaimed, as well as a schedule of punishments on the "eye for an eye" principle. I give only one example to illustrate the way this *lex talionis* worked: "If the doctor has treated a man for a severe wound with a bronze lancet, and has cured him, or has opened an abscess of a man's eye with a bronze lancet, and has cured the eye, he shall take ten shekels of silver." On a comparison of purchasing power, this would equal about fifty or sixty guineas of our money. On the other hand, if in the first case the doctor causes the man to die, or in the second case causes the loss of the man's eye, his hands shall be cut off. Both the reward and punishment are reduced with the status of the patient, and if he be a slave he is paid but two shekels by the master and, in the case of death, must replace slave for slave.

Such personal penalties were in vogue at various times and places for the next 3000 years, and it is recorded that a dying Duchess of Burgundy in the sixth century A.D. persuaded her husband to put to death her doctors who had not cured her of the plague.

[1] Read at the annual meeting of the South Australian Branch of the British Medical Association on June 23, 1954.

In ancient Egypt, at an even earlier date, about 3000 B.C., there was an organized medical profession, but only a few papyri are known which refer to the 32 Hermetic books of the great god Thoth. It is known that the rash physician who departed from the orthodox therapy of his text-books had a very short expectation of life after the death of his patient.

The Old Testament is surprisingly sparing of references to the practice of medicine, probably because health and disease were in the gift of God. The somewhat invalid Apocrypha contains, in the book of Ecclesiasticus, a famous eulogy of the medical profession, but the last verse is somewhat unhappily phrased: "He that sinneth before his Maker, let him fall into the hand of the physician."

Thus far, as you will see, there has been little evidence of a code of ethical conduct as we know it today. We wait for Hippocrates, and we wait a long time—until 460 B.C. This was the year of his birth, and he probably lived for about one hundred years.

His famous Oath is too well known to quote here in its entirety, but I would like to refer, with respect, to the final pledge, the most easily forgotten and commonly transgressed of them all. The translation of Francis Adams, probably the best known, reads: "Whatever, in connexion with my professional practice *or not in connexion with it*, I see or hear, in the life of men, I will not divulge, as reckoning that all such should be kept secret." I shall revert to this later.

The next important step in medical development was licensing. This began in Rome with Antoninus Pius, who passed an edict to protect the public from quacks in about A.D. 150. Incidentally, Antoninus Pius was without doubt the ablest and wisest administrator of all time; he also exempted physicians from taxation. No mention is made of surgeons.

For a thousand more years there was little advance, until in 1224 the Emperor Frederick II introduced a law requiring a practitioner to undergo a course of training and an examination before being licensed to practice. This law also regulated fees.

The German States in 1347 and Italy in 1368 enacted similar laws.

Medical practice and public opinion were working together to produce a standard ethical procedure. A cure was no longer promised, but the doctor undertook to exercise, with a fair degree of skill and knowledge, the necessary care of his patient. It soon became necessary to pass examinations at a medical school, and unlicensed practitioners were liable to punishment.

The surgeons were in a different category. Lanfranc in 1295 described the well-shaped long fingers necessary for a surgeon, and laid down laws of conduct. These follow Hippocrates, but add a few words of practical advice that all surgeons would be happy to follow; for example, "let him love no hard cures and undertake no desperate cases" and "in all manner of sickness promise the patient health although he despair of him, but nevertheless tell his friends the truth".

De Mondeville, Lanfranc's contemporary, was a humorist or a cynic in his ethical concepts. "When treating an accident", he says, "the friends should be excluded as they may faint and cause a disturbance; nevertheless a higher fee may be obtained from persons fainting and breaking their head than from the principal patient."

The rivalry between physicians and surgeons was keen even in the Middle Ages. De Mondeville suggests that if a physician is not getting results he should say: "My business prevents me from attending you any longer so I advise you to call in a surgeon." That he had a keen and inquiring mind is shown by his famous remark: "God did not exhaust all his creative power in making Galen."

The College of Physicians of London was founded in 1518 by Sir Thomas Linacre so that "its members, by constant association, might improve the standard of their learning and the practice and morals of their profession". They were also enjoined to be circumspect in consultation and jealously to guard the reputation of a colleague.

More than two hundred years later again, Percival's "Code of Medical Ethics" was produced. Percival emphasizes the need for humanity combined with authority in the handling of hospital and charity patients, and condemns the discussion of his case before the patient. He also stresses professional secrecy.

The final word, to my mind, on the requirements of a doctor, comes from the United States of America. Mr. Justice Brewer (United States Supreme Court: Hawker v. New York, 170 U.S. 192) said: "The physician is one whose relations to life and health are of the most intimate character. It is fitting not merely that he should possess a knowledge of sicknesses and their remedies, but also that he should be one who may safely be trusted to apply those remedies. Character is as important a qualification as knowledge, and if legislation may properly require a definite course of instruction, or a certain examination on his learning, it may with equal propriety prescribe what evidence of good character shall be furnished. These propositions have often been affirmed." (As someone said of the late Queen Mary, "there is no substitute for character".)

This survey, sketchy though it be, will serve to show that over thousands of years efforts have been made to formulate rules of conduct for practitioners of healing.

From the instances I have given it will be noted that many of these have been simply regulations governing fees or technical matters—some good, some bad. But at least they go to show, especially since the time of Hippocrates—that there has been felt a need to put into words and practice certain concepts of ethical conduct. The resultant propositions may be without the force of law, and many of them are without the enforcement of medical ethical rules. Nevertheless, they are fundamental to the sane governance of our profession.

Some of these are so obvious that to repeat them should be a needless task, but after a year in this office I fear that this is not so.

I need refer only to a few aspects of medical etiquette, which is that part of ethics concerning relationships between doctors. How often one hears of a patient being "stolen" by another doctor, who has been called in while the patient is under treatment, or being retained by a consultant after reference by a general practitioner. Many such cases could be simply resolved by a telephone call or other personal communication, but there are some which are well founded.

One hears complaints of people who inquire about the purchase of a practice and then set up in opposition to that practice; and of established practitioners opening branch surgeries in a new district in opposition to a new doctor. Many such complaints are without ethical foundation, and all are difficult to decide.

The more profound ethical cases are those concerning the doctor-patient relationship, and these are the ones that arise less frequently, I am glad to say, though perhaps only because they do not come to light.

Many of these concern professional secrecy, and I feel that they are too often accepted as natural by some of us. As I said before, quoting from the oath of Hippocrates: "Whatever, in connexion with my professional practice, *or not in connexion with it*, I see or hear, in the life of men, I will not divulge, as reckoning that all such should be kept secret."

We none of us "give a deadly medicine to anyone if asked" or fail to "abstain from voluntary acts of mischief, and the seduction of females or males, of freemen or slaves" when we enter a patient's house, but do we always abstain from gossip? I refer particularly to gossip among ourselves, and more especially about ourselves. I have often been struck by the freedom with which intimate details of a doctor's illness are bandied about between doctors. The interest here is not in the technical aspects of the illness so much as in the patient.

I do not wish to dwell here on moral as opposed to ethical offences. Many complaints are received by the Council on wrongful certification, excessive attendance on pensioners *et cetera*. These are beyond the scope of this address, and if a legal offence has been committed it should be dealt with by the processes of the law.

Some such cases are frankly scandalous and should be met by the imposition of severe penalties. It is hoped by the vast majority of members that this will be the case.

I do not for a moment believe that the standards of medical ethical—or even moral—conduct have deteriorated over the last few centuries. That would almost be impossible. We do not now, I believe, have people (like the Chamberlins, with their obstetric forceps) who keep secret their valuable discoveries or inventions. We do not have people entering medical practice who have not undergone a proper course of training—I should perhaps say, rather, that we do not have them entering the organized ranks of the profession.

I do believe, however, that ethical conduct has not improved as it should have done in comparison with technical, social and economic developments.

We may look back on olden times and compare a few things in the ways of life of various eras. Take but two aspects of development: first, methods of destruction, and second, communications.

Before Hippocrates, and for nearly 2000 more years, the spear, the bow and arrow and the sword were the principal weapons. Then in the fourteenth century came the discovery of gunpowder, and with it the possibility of mass destruction at a distance. Then from the eighteenth to the twentieth century came the eras of the steam engine, dynamite, the internal combustion engine, and finally the hydrogen bomb.

There are now incalculable forces at human command which, it is said, may wreck civilization.

In the sphere of communications, that most powerful influence on social relations, it is well to remember that from the beginning of civilization until the nineteenth century the transmission of ideas was controlled by the speed of a galloping horse. In these days, with electric telegraphy and radio, ideas may be transmitted with the speed of light; and with jet propulsion, physical transportation may be accomplished at above the speed of sound.

Is it possible that scientific achievement has been too rapidly advanced for our moral development? I suggest that it has.

We have lost simplicity and have developed a complexity that easily confuses simple issues.

No longer can we see clearly, as our forebears did, the rights and wrongs of a course of action or conduct. To our great grandfathers, and even to our fathers, the choice was between black and white. To most of us the choice is between shades of grey, and is not easily made. On a simple issue it should be a simple choice.

In a moral or ethical decision either a man follows the golden rule or he does not. If he does not, either he has no conscience or his conscience pricks him.

Let us endeavour to come to the end of the road as Cardinal Wolsey did, according to Shakespeare. Shorn of his great possessions, in the shadow of Henry VIII's fury, he replies (in answer to Cromwell's question "How does your grace?"):

> Why, well;
> Never so truly happy, my good Cromwell.
> I know myself now; and I feel within me
> A peace above all earthly dignities,
> A still and quiet conscience.

The "key phrase" in this speech, it appears to me, is "I know myself now". If a man knows himself, he must cast aside the shoddy subterfuges with which he can deceive himself.

Let us all endeavour so to conduct our affairs that when we can say "I know myself" we can like what we know.

OUT-PATIENT ASSESSMENT OF THE "NOVO" INSULINS.

By J. F. C. C. COBLEY, K. S. HARRISON, R. B. BLACKET and L. E. HEWITT,

From the Diabetic Clinic, Royal Prince Alfred Hospital, Sydney.

THE "Novo" insulins have been used in the Diabetic Clinic of the Royal Prince Alfred Hospital since January, 1954. An attempt has been made to assess their value by comparing the degree of control of diabetic out-patients using them with the degree of control on previous insulins, without change of diet. "Lente" insulin has been used, supplemented by "semilente" insulin when necessary.

There are limitations in such an inquiry. All the patients were out-patients attending a busy diabetic clinic, and adequate blood sugar studies could not be performed. It was decided that the investigation of random non-fasting blood sugar values was of little value.

We have inferred that a patient's diabetes was well controlled when tests of his urine at home and at the clinic produced consistently blue or green colour to Benedict's reagent over a considerable period of time on an unchanged dose of insulin, and when there had been almost complete freedom from hypoglycæmic episodes.

Brief Review of the Literature.

Lawrence and Oakley (1953) and Oakley (1953) reported their results in a series of 37 patients, 14 of whom were out-patients. When other insulins had been used previously, lente insulin in equivalent dosage gave satisfactory control. Stowers and Nabarro (1953) and Nabarro and Stowers (1953) found that supplements of ultralente or semilente insulin improved the efficacy of lente insulin. Murray and Wilson (1953) and Venning (1954) also found that lente insulin had to be supplemented with ultralente or semilente insulin to get the best results. Using lente insulin alone, chiefly on out-patients, FitzGerald, Thorn and Malins (1954) reported disappointing results when the dosage was equivalent to that of the insulin preparations used previously.

Method.

One hundred and fifty-six patients attending the clinic regularly were chosen for study. All fulfilled the following criteria: (i) a diabetic state present for a period of time sufficient for study, controlled for an adequate period with insulin, withdrawal of which would rapidly have caused heavy glycosuria; (ii) the absence of any complicating condition which would be likely to worsen carbohydrate tolerance.

If any selection was used, it was only to exclude a small number of patients who could not be depended on to adhere to their diet, give their insulin accurately, or record the results of their urine tests faithfully. According to our definition of "control" for clinic purposes, all had been well or fairly well controlled for a sufficient period of time to justify our thinking that their condition was stable. A small number of patients whose condition was not well controlled on mixtures of other insulins were treated with lente insulins to see if satisfactory control could be obtained.

The insulin dose of these patients was altered to provide a daily dose of lente insulin half to one hour before breakfast equivalent to the total dose of insulin prior to the change-over. They were asked to test their urine more frequently and to attend the clinic once a week. In 96 cases the dose of insulin was altered at subsequent visits until their condition was again stabilized, this occasionally necessitating the addition of semilente insulin. In the remaining 60 cases the initial dose was not altered, and the effect of the equivalent dose of lente insulin was compared with that obtained with the older insulins.

Results.

The results obtained in the first group of 96 patients are set out in Table I.

Sixty-five patients achieved the same or better control and 15 were worse. The results were indefinite in 16 cases. Of the 96 patients, 37 required a higher dose of the "Novo" insulins than of other insulin preparations. In 23 of the 37 cases the control was either no better or worse than with lower doses of other insulins.

Six patients of the 96 required a mixture of insulins to bring about good stabilization, and a mixture of lente and semilente insulin proved adequate in each case. Of these six patients, only two needed a higher daily dosage than their original requirement.

TABLE I.

Former Insulin.	Number.	Better.	Unchanged.	Worse.	Indefinite.
Protamine zinc insulin	13	2	7	3	1
Protamine zinc insulin and soluble insulin ..	77	20	32	12	13
Globin insulin ..	2	—	1	—	1
Soluble insulin ..	4	3	—	—	1
Totals	96	25	40	15	16
Higher dosage ..	37	9	13	10	5

Twenty-seven patients had mild hypoglycæmic reactions in this series.

The results in the second group of 60 patients given the same unit dose of lente as of other insulins are shown in Table II.

In 40 cases the degree of control was the same or better, while the condition of the remaining 20 patients was not so well controlled.

TABLE II.

Former Insulin.	Number.	Better.	Unchanged.	Worse.
Protamine zinc insulin ..	30	2	20	8
Protamine zinc insulin and soluble insulin	19	3	10	6
Globin insulin	1	—	—	1
Soluble insulin	9	2	3	4
N.P.H. insulin	1	—	—	1
Totals	60	7	33	20

Four patients had mild general reactions in this series.

In the combined series of 156 cases, local reactions in the skin occurred in seven patients, in one of whom they were sufficiently severe to cause abandonment of the "Novo" insulins. In one other patient the local reactions were associated with the gradual development of insulin resistance.

Discussion.

This group of 156 patients was unselected. The majority were having separate injections of protamine zinc and soluble insulin before changing to the "Novo" insulins. The dosage varied from 16 to 144 units daily. The highest dose of the new insulins used was 140 units. In 65 cases of the first group of a total of 80 in which the result could be assessed, control was as good as, or better than, with other insulins. Twenty-two of the 65 patients needed a higher dosage of lente insulin than of other insulins; but this was seldom more than 25% greater than the equivalent dose of older insulins. Some patients whose diabetes was hard to control with soluble and protamine zinc insulin were just as hard to control with the "Novo" insulins.

It will be noted that the condition of 15 of the patients in the first group was recorded as worse when they received "Novo" insulins than when they received protamine zinc and soluble insulin. If we add to this number the 40 patients whose condition was unchanged, 55 of the 80 patients in whom a definite assessment was possible had their diabetes just as well controlled on the older insulins as on the new. The difference between the fractions 65:80 and 55:80 is clearly of no significance, and it cannot be concluded that the "Novo" insulins as used so far in this clinic have any advantage over soluble and protamine zinc insulin if we judge only by their efficacy in controlling the urinary sugar excretion. It is perhaps unfair to compare a preparation with which we are relatively unfamiliar with preparations we have used for years. If we have used the new insulins badly, then further experience may make their advantages more apparent. One advantage, not reflected in the statistics, is that patients prefer one injection to two. As is always to be expected with new drugs, some patients at least said that they felt better with the new insulin than they did with the old forms. Though this may reflect better control of diabetes, the statistical evidence gives such statements no support. Although in this first group 32 patients of the 80 required a larger dose of insulin, and although in 10 of them control was worse in spite of the bigger dose, this cannot be used as an argument that the "Novo" insulins are less effective or less desirable than the older insulins.

In the second group of 60 patients the results pointed in the same direction. They show that, when control was adequate on protamine zinc insulin alone, it tended to be worse on the same dosage of lente insulin; presumably some of those whose condition was worse would have responded to a higher dosage of "Novo" insulin. If this is to be accepted, it can be concluded from the entire series that the majority of patients controlled on protamine zinc insulin can be controlled equally well on lente insulin, provided the dosage of the latter is raised when necessary.

Similarly, when the patients of the second group previously treated with protamine zinc and soluble insulin are compared with those of the first group, it appears likely that a somewhat higher dosage of "Novo" insulin than of the older insulins combined will give good control of diabetes. It is in this group that further experience may show some superiority of the "Novo" insulins; but on the present evidence a conclusion is unwarranted.

It is also possible that some at least of those "brittle diabetics" who need two injections of soluble insulin a day will do better on a single injection of "Novo" insulin equivalent to or greater than their daily requirement of soluble insulin. However, our data are insufficient to give statistical proof of this.

The 20% incidence of hypoglycæmic reactions almost certainly reflects the inexperience of both the patients and the physicians with the "Novo" insulins. The great majority had only one or two reactions before either the dose of insulin or the carbohydrate distribution was altered. The reactions were mild and of slow onset, and occurred in the afternoon, but occasionally in the morning or evening. Two patients became comatose, one in the morning after too little breakfast and unwonted exertion, the other in the afternoon after missing lunch. By and large, the incidence of reactions was certainly no greater than in diabetics being stabilized on old insulins.

We were unable to confirm earlier reports that "Novo" insulins do not cause local sensitivity reactions. We found them in seven cases, and in one the reactions were severe.

In this series the value of the miscibility factor has not been adequately investigated. We have not had sufficient experience in the use of mixtures of semilente and ultralente insulin in varying proportions, but we feel that this miscibility factor, when full advantage is taken of it, may well increase the value of the "Novo" insulins.

Finally, it must be emphasized again that this small clinical trial was carried out in a diabetic clinic where frequent estimations of blood sugar level at strategic intervals during the twenty-four hours were impracticable. It is possible, therefore, that an in-patient series may show better control of blood sugar content with "Novo" insulins than we have been able to infer from urinary sugar studies. In any case, the control of diabetics is essentially an out-patient procedure and is dependent on rough urinary tests for sugar. The older insulins have been assessed in this way, and it is legitimate to test the new ones in the same way. By the use of these crude tests it is clear that in our hands superiority of the new insulins over the old has not been adequately proved. It would appear that some patients whose condition is not controlled satisfactorily by injections of soluble and protamine zinc insulin, or of soluble insulin twice a day, may do better on "Novo" insulins. On the other hand, some appear to be worse. We have no convincing statistical evidence that the new treatment is better than the old, but some patients have done well, and the use of a single injection has been of undoubted benefit.

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TREATMENT OF PERSISTENT DIPHTHERITIC INFECTION WITH ERYTHROMYCIN.

By J. A. FORBES,

Fairfield Hospital, Melbourne.

FOLLOWING the recommendation of McGuire *et alii* (1952) that corynebacteria are sensitive to erythromycin, and the report by Haight and Finland (1952) that this drug had been used successfully to treat three diphtheria carriers, treatment of persistent diphtheritic infection with erythromycin was begun in this hospital when supplies of the drug became available.[1]

Prior to this, repeated courses of penicillin, each lasting for five days, were used in those cases in which *C. diphtheriæ* persisted following clinical diphtheria. Erythromycin was administered to 14 patients, all of whom were children, after two five-day courses of penicillin had failed to clear the infection.

Details of Antibiotic Treatment.

In all cases *C. diphtheriæ* was identified by culture, and the serological type and virulence were demonstrated. After the patient's admission to hospital nose and throat swabs were cultured each week and not less than three days after the completion of a course of penicillin, to detect persistent infections. The patients were held in hospital until examination of three swabs of the nose and throat taken at intervals of two days gave negative results. These "discharge" swabs were submitted when the patients were ready clinically to leave hospital.

On admission to hospital the patients received 300,000 units of crystalline penicillin followed by 100,000 units every six or eight hours for a period of five days, in addition to specific treatment for diphtheria. Those cases in which the infection persisted after the first five-day course of penicillin received a second similar course.

The patients from whom *C. diphtheriæ* was grown on culture after this regime were then treated with 200 milligrammes of erythromycin every six or eight hours for five days. These patients were discharged from hospital after the routine examination of three swabs and were examined again three weeks later by means of swabs taken from the nose and throat for culture.

Results.

Fourteen diphtheria patients in whom infection had persisted following two courses of penicillin were treated with erythromycin and subsequently examined in the way described.

In all these cases examination for virulent *C. diphtheriæ* of all the swabs taken after the single course of erythromycin gave negative findings. In three cases avirulent types of *C. diphtheriæ* were demonstrated after periods of six weeks; but in each of these the virulence of the previous infecting organism had been demonstrated at the time of the patient's admission to hospital, so that these organisms were apparently due to separate infection.

Summary.

Fourteen patients with diphtheritic infection which persisted after two separate periods of treatment with penicillin have been treated with erythromycin for a single period of five days.

In all these cases no virulent organisms were demonstrable four days after cessation of treatment, and this clearance appeared to be permanent.

Acknowledgements.

I wish to acknowledge the assistance received from Dr. Ian Hewitt, who was the medical officer supervising the treatment of these patients.

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[1] The hospital is indebted to Dr. Stanley Williams and Eli Lilly and Company, Limited, for making available trial samples of "Ilotycin" for use in these cases.

PRELIMINARY REPORT ON AN INVESTIGATION OF FŒTAL ELECTROCARDIOGRAPHY AND FŒTAL STETHOGRAPHY.[1]

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AND

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THE development of fœtal electrocardiography, and its application, appear likely to be of greater importance to the obstetrician than to the pædiatrician. In many cases, the information gained may also be obtained by clinical methods, or by the use of X rays.

Historical Survey.

The first paper on the subject of fœtal electrocardiography was published in 1906, and, according to Bell (1938), between then and 1938 only eight papers on the subject appeared. In 1933, Steffan and Strassmann, using an Einthoven string galvanometer, obtained electrocardiographic records with small waves, which they advised

[1] Presented at a clinical meeting of the New South Wales Branch of the British Medical Association on September 17, 1953.

should be examined with a magnifying glass. Before this date, fœtal electrocardiograms had been obtained in the horse, but probably never in the human. Matthews (1939) introduced a balanced input valve amplifier into the system. Bell (1938) found that the best results could be obtained with one electrode on the mother's abdomen over the fundus of the uterus, and the other on the *symphysis pubis*. In only one-third of cases was a positive result obtained. Bell recorded the fœtal electrocardiogram in a twin pregnancy. The earliest occasion on which he obtained a fœtal electrocardiogram was thirty-four days before delivery. With considerable point, he remarked: "It can, at least, be said in its favour, that unlike so many biological tests for pregnancy, it would not be expected to produce any false 'positives'."

Mann and Bernstein published a further paper in 1942.

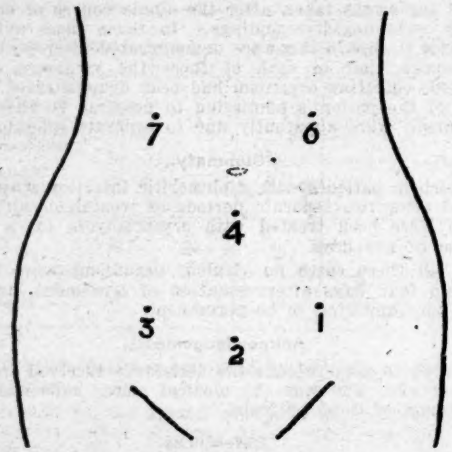

FIGURE I.

Up to this stage in the development of fœtal electrocardiography, workers were struggling with apparatus that was inadequate for one or more of the following reasons: (i) insufficient sensitivity; (ii) too responsive to electrical interference of extraneous origin; (iii) inadequate or poorly controlled frequency response; (iv) too unstable.

Lindsley (1942), using an electroencephalographic apparatus, recorded fœtal electrocardiograms.

Recordings of fœtal electrocardiograms in the sixteenth week of pregnancy have been reported by Ward and Kennedy (1942), by Bernstein and Mann (1942), and by Goodyer, Geiger and Monroe (1942).

Present Investigation.

Fœtal electrocardiograms with clearly defined *P*, *Q*, *R*, *S*, and *T* waves have been obtained in gestations as early as seventeen weeks, and in several before twenty weeks. The heart of the embryo is said to commence to beat at the end of the third week (Sir Arthur Keith, 1948), so theoretically it should be possible to obtain some electro-physiological evidence of the heart beat at a stage earlier than seventeen weeks, and investigation is proceeding with this as one of the objects.

We have recorded electrocardiograms in several twin pregnancies. Stethograms have also been recorded during the last trimester by means of microphones placed on the mother's abdomen, and connected to recording amplifiers.

In a patient with multiple pregnancy diagnosed radiologically at sixteen weeks, even with repeated monthly attempts we were unable to obtain more than the electrokymogram of one fœtus. At the thirty-sixth week of pregnancy, the patient was again radiologically examined, and this revealed that one fœtus had died at the sixteenth week. At term, a normal fœtus together with a *fœtus papyraceus* was expelled.

Positive Signs of Pregnancy.

The classical positive signs of pregnancy are the feeling of fœtal parts, the feeling of fœtal movements, and the hearing of fœtal heart sounds. With the introduction of X rays, to these was added the detection of the fœtal skeleton by X rays. The practice of fœtal electrocardiography has now progressed to the stage at which the obtaining of a fœtal electrocardiogram can be added as a further positive sign of pregnancy.

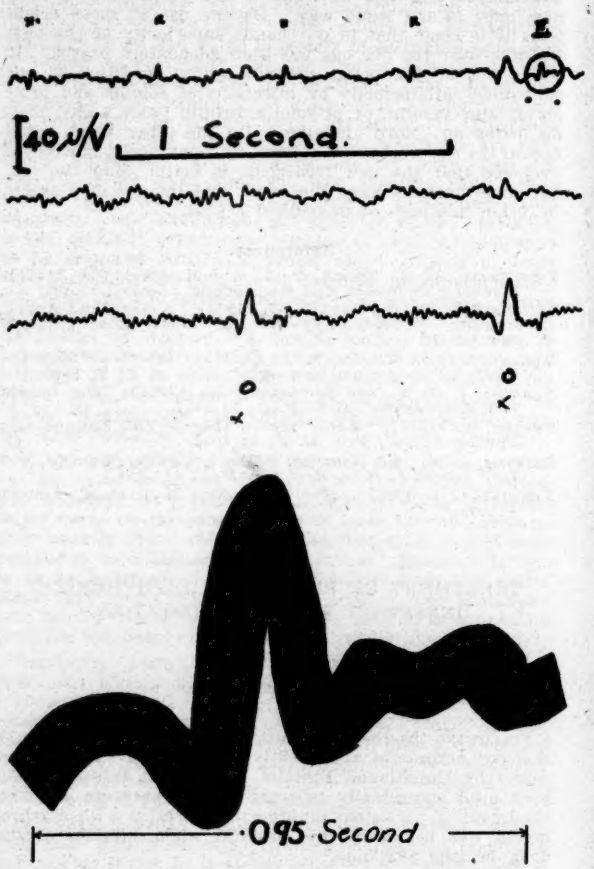

FIGURE II.[1]

This is the electrocardiogram of a fœtus at nineteen weeks' gestation. During the study of this record a number of complexes that were particularly free from interference were selected and superimposed one over the other. An average pattern was derived from this group. The complex in the circle most nearly conformed to the average pattern obtained as above. The enlargement is of this single complex. This is a photographic reproduction. It is considered that this complex includes the *P* wave, the *QRS* complex and the *T* wave. The maternal electrocardiogram is in the bottom tracing. The fœtal pulse rate is 156 per minute.

In suspected pregnancy, weeks before the classical positive signs are present, the obtaining of a fœtal electrocardiogram gives absolute proof that a pregnancy exists and that the fœtus lives.

Indication of Presentation and Presence of Multiple Pregnancy.

Fœtal electrocardiography may also determine whether the fœtus presents by the breech or the vertex, and whether the pregnancy is multiple.

[1] The tracings in Figures II, III, IV and V have been reduced to approximately one-third the size of the originals.

Use of Fœtal Stethography.

Fœtal stethography is a further method of detecting the fœtal heart beats. In this investigation it has been used only during the last three months of pregnancy. It may be used in conjunction with fœtal electrocardiography.

Apparatus.

A "Grass" Model III six-channel electroencephalograph was used as the basic amplifying and recording unit. This was used in conjunction with electrodes for electrocardiographs.

Three types of electrodes are used. Type I consists of flattened solder pellets on the ends of fine flexible wires. The flattened disks are seven millimetres in diameter. These are applied where the surface is hirsute. The type II electrode is intended for intravaginal application. It consists of a metal sphere 13 millimetres in diameter, with a projection on one side by which it is connected to a piece of rubber tubing one centimetre in diameter. This prominence is also connected to a piece of flexible wire which passes along the bore of the tubing. The rubber tube is of sufficient rigidity and such length as to enable the electrode to be introduced by gentle pressure as far as the vault of the vagina. Type III electrodes are small cup-like electrodes, modified versions of the standard suction type electrocardiograph chest electrodes. We propose to refer to these electrodes in future as "limpet electrodes". They are used on the smooth surface of the abdominal wall.

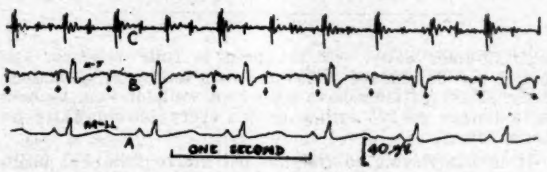

FIGURE III.

Mrs. B., with thirty-four weeks' fœtus. A: Maternal electrocardiogram, lead I. The calibration of this tracing is one centimetre equal to one millivolt. B: Fœtal electrocardiogram indicated by arrows. Note their inversion with respect to maternal electrocardiogram, a component of which is seen in the same tracing. C: Fœtal stethogram; microphone placed on mid-line about three inches above the *symphysis pubis*.

Apparatus for fœtal stethography has been designed and described by Gunn and Woods (1953). For eighteen months we have used a crystal microphone especially adapted for stethography and used in conjunction with the electroencephalograph. It produces very satisfactory records, as shown in Figure IV, and has the added advantage of being recorded simultaneously with the fœtal electrocardiogram. In practice, this means that the first and second sounds can be accurately identified, as well as the position of any other regularly recurring sound in relation to the cardiac cycle.

Technique.

Our present technique uses an electrode arrangement as shown in Figure I. The electrodes I and III are moved outwards and upwards as the state of the development of the uterus indicates. The electrodes VI and VII are placed a similar distance either side of the mid-line at the level of the *fundus uteri*. The electrode IV is placed on the mid-line, midway between electrodes I and III and electrodes VI and VII. The electrode II is placed just above the superior margin of the *symphysis pubis*.

The pellet electrodes are applied as follows. A small quantity of electrocardiographic electrode paste is rubbed into the skin where each electrode is to be applied, and the areas are then wiped dry. A very small quantity of paste is then applied to one side of the pellet electrode, and the electrode is pressed and held firmly against the skin, while it and a half-inch of the connecting wire are covered with collodium and dried.

The tip of the vaginal electrode is placed in the vagina, and the electrode is then gently pressed up to the vault. No other conducting medium other than the natural secretion is needed for this electrode.

To apply limpet electrodes, a small quantity of electrode paste is rubbed into the skin, the air is squeezed from the rubber bulb, and the hollow side of the electrode is applied to the skin. The rubber bulb is then released.

The gain (or sensitivity) of the apparatus is set for a deflection of one centimetre for an input of 40 microvolts, peak to peak.

Traces are derived from all possible electrode combinations during the search for a fœtal electrocardiogram.

Reference to the illustrations shows that the investigation has developed still further the technique of fœtal electrocardiography and phonocardiography, with consequent improvement in the recordings.

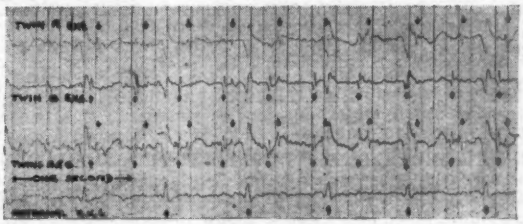

FIGURE IV.

Fœtal electrocardiograms of twins at thirty weeks.

Material and Results.

In the fœtal age group of seventeen weeks to term, 32 records were made. This series is made up of single records from 17 different patients, and from a number of reexaminations of four patients. Of these four patients, two were examined six times at various stages of gestation. The only occasions upon which satisfactory electrocardiograms were not obtained were twice from one patient who was investigated six times, and once from another who was also investigated six times.

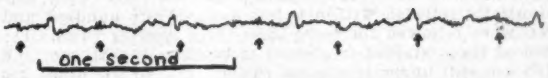

FIGURE V.

Electrocardiogram taken sixteen weeks and three days after the beginning of the last menstrual period. Mrs. C.; last menstrual period May 29, 1953. Fœtal electrocardiogram taken September 21, 1953. Confined March 7, 1954. Weight of baby at birth, seven pounds five ounces.

The failures to record the electrocardiogram in these two patients in each instance occurred during the four weeks before delivery, and after very satisfactory records had been obtained earlier in their pregnancy. However, very satisfactory stethograms were obtained on each of these three occasions.

In short, from 32 attempts, 29 satisfactory electrocardiograms were obtained, including those of both twins in two cases, and that of the live twin in the third case, and satisfactory stethograms were obtained in the remaining cases. In this fœtal age group satisfactory electrocardiograms were obtained in over nine-tenths of the cases investigated.

Acknowledgements.

We wish to thank members of the Honorary Medical Staff of Sydney Hospital, The Women's Hospital, Crown Street, and the Royal Hospital for Women, Paddington, for referring patients, and Dr. Norman Rose, Medical Superintendent of Sydney Hospital, for his kindly interest.

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PHENYLBUTAZONE ("BUTAZOLIDIN"): GOOD OR EVIL? ANTIRHEUMATIC OR ANALGESIC?

By MICHAEL KELLY,
Melbourne.

AFTER two years of general use, these two questions about phenylbutazone need to be answered: (i) Can it be used without restriction? (ii) Is it antirheumatic or analgesic?

All agree that it relieves rheumatic pain, but many fear its toxic effects more than they appreciate its benefits.

510 of 605 Patients Relieved.

Since September, 1952, I have examined 605 rheumatic patients who have taken phenylbutazone; 510 were substantially relieved within a few days. Four hundred and ten were followed for more than three months (Table I); 286 of these started treatment more than a year ago, and 105 are still under treatment (Table II). Of the other 305 patients, 92 were "cured" and 98 when last heard of were much better and still taking phenylbutazone. Thirty-five patients stopped taking the drug because of toxic effects, 56 because they had become refractory to it, and 24 for various other reasons.

Thirty-five non-rheumatic patients were not relieved of pain from pyogenic cellulitis, traumatic inflammation, peripheral neuritis, spinal metastases and carcinoma of the pancreas.

Rheumatic affections of all kinds were relieved equally. Acutely distended joints subsided partly or completely in 110 patients (gout, monarticular arthritis, rheumatic fever, monarticular flare-up in chronic polyarthritis). Of the 92 patients cured, 23 had gout and 42 had localized and recent lesions (backache, sciatic pain, stiff neck, painful feet or shoulders—Table III).

Selection of Patients.

The first patients were almost unselected; but with experience they have been more and more carefully chosen. The last 190 have been restricted to those aged under sixty-five years, who were not too feeble and who did not have hypertension or chronic diseases of the nervous system, kidneys, lungs or alimentary tract. Toxic effects have become correspondingly less common (Table IV).

Dosage.

The first 82 patients were given 800 milligrammes daily; then 71 had 600 milligrammes daily, and 187 had 400 milligrammes daily (Kelly, 1953). In each group the same proportion of patients was relieved; but with small doses the effect was often delayed for a few days. The correct dosage is 600 milligrammes daily for two days, then 400 milligrammes daily. If the pain is fully relieved, the dosage can be reduced to 300 and then to 200 milligrammes daily. Fifty patients have been kept well for long periods on a dosage of 200 milligrammes every second, third or fourth day.

TABLE I.
410 Patients Treated with Phenylbutazone for More than Three Months.

Condition.	Number of Patients.
Rheumatoid arthritis	144
Local fibrositis	61
Multiple fibrositis	61
Osteoarthritis	57
Periarthritis of shoulder	31
Sciatic pain	23
Gout	28
Rheumatic fever	5
Total	410

It is inadvisable to tell the patient to take 600 milligrammes daily for several weeks; the dose should be reduced after two days and the patient should be examined in a week. If treatment is ineffective, it should be stopped after a week and tried again in three weeks. One hundred and forty-six patients failed to respond at the first trial; 86 of these were given a second or a third, and 51 responded. The response of the body is phasic; to continue when it is not responding might make it refractory. Courses of alternate weeks on and off treatment are ineffective.

TABLE II.
105 Patients Relieved and Still Taking Phenylbutazone after One Year.

Condition.	Number of Patients.
Rheumatoid arthritis	58
Osteoarthritis	18
Multiple fibrositis	15
Local fibrositis	8
Periarthritis of shoulder	6
Total	105

Refractory State.

Thirty-five patients who did not respond to three trials were permanently refractory. Of those who were followed for more than three months, 56 became refractory. The symptoms all returned and could not be relieved by increasing the dose. The refractory state may be brought on by continued high dosage or by underdosage. It is less likely to develop if treatment is suspended suddenly or if it is continued with the correct dosage. It can be overcome in most cases (but not all) by withdrawing the drug completely for eight to twelve weeks.

A patient with an osteoarthritic hip became completely refractory to the drug. Several trials failed after early relief. He abandoned the drug; but a year later he tried it again, with remarkable relief, which has lasted for six months.

Other patients become partially refractory. The pains increase and we may believe that the drug is no longer effective. But when we withdraw it the increased complaints of the patient show that it was still relieving him.

Toxic Effects.

Toxic effects are due partly to excessive dosage; they are twice as common with high as with low serum levels of phenylbutazone (Bruck *et alii*, 1954). They are much less frequent with a dosage of 400 milligrammes daily than with the earlier doses, and still less frequent when the dosage has fallen to 300 or 200 milligrammes within two weeks (Table IV).

TABLE III.
92 Patients "Cured".

Condition.	Number of Patients.
Gout	23
Local fibrositis	16
Sciatic pain	13
Periarthritis of shoulder	13
Rheumatoid arthritis	9
Multiple fibrositis	7
Osteoarthritis	6
Rheumatic fever	5
Total	92

Age is also a predisposing factor to toxicity; 45% of those aged over sixty-five years have had complications, against 27% of those aged under forty-five years (Table V). Of 190 patients aged under fifty-five years treated with low doses, 33 have had complications and only five have had to stop treatment.

TABLE IV.
Complications Related to Dosage.

Daily Dosage.	Number of Patients.	Complications.
600 milligrammes or more[1]	153	70 (45·7%)
400 milligrammes or less	257	72 (28·0%)
Total	410	142

[1] 70% of the patients aged over sixty-five years were in this group.

Many of the side effects are mild or negligible. The others, which I have called complications (Table VI), vary greatly in importance. They all disappear after the drug has been withheld for a week; treatment can usually be resumed after two or three weeks. Of the complications, 93% appeared within the first five weeks; when the patient has passed this critical period he is relatively safe.

Cardiac and gastric complications are exceptions to both of these rules. They usually come early, but a few have appeared late. Four patients aged over fifty-five years first felt anginal pain after six to twelve months; it has not recurred since the drug has been withdrawn. Angina, palpitations, melæna or persistent gastric pain should preclude further treatment, because these complications will recur at a second trial.

Stomatitis may appear early or late. When early, it may be part of a systemic upset; when late, it is usually negligible.

Despite regular cell counts, only two patients developed leucopenia. Both were ill, with fever and other symptoms. Eighteen other patients with the same symptoms had normal cell counts. Counts of 3500 leucocytes per cubic millimetre should be disregarded—the lower limit of normal. White cell counts should not be considered obligatory; the patient's symptoms are far more important. In two early cases of hæmolytic anæmia the patients had continued to take phenylbutazone after toxic effects had appeared.

Other Effects.

Phenylbutazone causes retention of water, and the patients often gain weight in the first two weeks. Œdema is commoner in old and emaciated patients than in younger patients; if it persists it indicates latent heart weakness. Chronic bronchitis and other infections are made worse, and healed gravitational ulcers may reopen.

TABLE V.
Complications Related to Ages of Patients.

Age (Years).	Number of Patients.	Complications.
Under 45	118	32 (27%)
45 to 54	107	35 (32%)
55 to 64	122	46 (37%)
Over 65	63	29 (45%)
Total	410	142

The nervous complications all disappeared within a few days of withdrawal of the drug, but existing nervous diseases were always made worse. Phenylbutazone does not relieve the pain of central nervous disorders; but radicular neuritis caused by rheumatic inflammation is frequently relieved. A patient with secondary spinal metastases had convulsions after taking five pills.

TABLE VI.
Complications in 142 Patients.

Complication.	Number of Patients.
Gastro-intestinal	49
Systemic[1]	33
Œdema	24
Neurological	15
Cardiac	10
Severe headache or neck stiffness	10
Panophthalmitis	1
Total	142

[1] "Systemic" means multiple complications, and often includes rash, fever, adenitis and stomatitis.

What of Calculated Risks?

Most of the tragedies from phenylbutazone, when not due to excessive dosage or extreme age, have been caused by persisting with treatment when toxic effects have appeared. The patient should be given a list of these and told to stop treatment as soon as any appear. Several patients have thought that the rash was German measles. A young woman who kept taking the pills despite fever and a rash became desperately ill, with delirium, generalized œdema and extreme leucocytosis.

Calculated risks can seldom be taken with phenylbutazone. If the treatment is effective it will have to be pursued for months, and people who have had dyspepsia are bound to get it again. Peptic ulceration and hæmorrhage may be stirred up. Nearly every patient with hypertension has developed tachycardia or anginal pain. Doubtless the majority of patients aged over sixty-five years would not get severe gastric or cardiac complications; but we cannot tell which ones will and which ones will not,

and with increasing age the risks outweigh the therapeutic benefits. One patient aged sixty-nine years had painless melæna six days after her supplies of the drug had run out.[1]

Serological Findings.

Clinical findings have been supported by analyses of the blood serum. The drug is absorbed rapidly from the alimentary tract, and produces clinical effects at concentrations above six milligrammes per 100 millilitres (Currie *et alii*, 1953; Burns *et alii*, 1953; Pemberton, 1954). It has its full effects at 10 milligrammes per 100 millilitres, and there is no advantage in higher serum levels. Absorption is ensured if the tablet is divided before it is taken (Bruck *et alii*, 1954). Levels above 14 milligrammes per 100 millilitres cannot be maintained even by intravenous injection.

Phenylbutazone combines with the serum proteins, and none is in solution. It is wholly metabolized in the body; none is excreted. But only 15% to 25% is metabolized daily, compared with 90% in animals. The results of animal experiments which describe it as a general analgesic (Wilhelmi, 1949; Domenjoz, 1952) cannot therefore be applied to man. Phenylbutazone in excess of 14 milligrammes per 100 millilitres is rapidly destroyed, how or where we do not know.

Amidopyrin, a near relation of phenylbutazone, behaves differently in the body and is metabolized very rapidly (Pulver, 1950). Anything we know about it, therefore, cannot apply to phenylbutazone.

Antirheumatic versus Analgesic.

Why do not we all acclaim phenylbutazone as a specifically antirheumatic drug? It is certainly not a general analgesic (Currie, 1953; Kuzell *et alii*, 1953). Non-rheumatic pains (stiff neck and headache, peptic ulcer, angina) are its own toxic effects, and it did not help any of my 35 non-rheumatic patients. It relieves rheumatic pain decisively, while morphine and the feebler analgesics aspirin and amidopyrin do not (Steinbrocker *et alii*, 1952; Currie, 1953). In acute arthritis it consistently suppresses joint pain and swelling.

All the general analgesics act within a few minutes of absorption, and their effects last only a few hours. Phenylbutazone acts after twelve hours and its effects last two or three days. Why, then, do we nearly all call it analgesic and not antirheumatic?

Phenylbutazone versus Cortisone.

Because cortisone so dominates our thinking that arthritis is held to be a steroid deficiency disease. Any drug which does not act through the pituitary-adrenal system must then be an analgesic and not a real antirheumatic—more especially if it is a pyrazole related to the feeble analgesic amidopyrin. Cortisone is specific for acute and subacute arthritis, while phenylbutazone loses its specificity by acting on all the rheumatic diseases. It could be argued, however, that the various rheumatic syndromes are not separate diseases but different stages of the same pathological process. Moreover, clinical evidence suggests that phenylbutazone acts more fundamentally than cortisone and stirs up deeper mechanisms (Holbrook, 1953; Brodie *et alii*, 1954).

Phenylbutazone resembles cortisone in its decisive effect on acute arthritis, and in two of its toxic effects (water retention and peptic ulceration). Though equally toxic,[2] it is much more valuable than cortisone, because it relieves nearly all the rheumatic disorders. The effect of a single adequate dose takes three times as long to appear and lasts six times as long. Moreover, many patients can do with gradually diminishing doses until they are cured, or until only a very small maintenance dose is necessary.

[1] Five early patients died. Two (aged eighty-eight and seventy-three years) developed heart failure, and one (aged seventy-six years) had chronic bronchitis. A previously anæmic patient died from hæmolytic anæmia after a year, and a chronic nephritic boy died six weeks after treatment was stopped.

[2] For prolonged treatment, phenylbutazone is safer than cortisone because it has neither its profound metabolic effects nor its severe withdrawal reactions.

Objective Tests.

Experience and judgement are required to assess rheumatic symptoms; we have no statistical tests of cure like the red cell count in anæmia and the blood sugar level in diabetes. Against phenylbutazone it is argued that it often fails to pass the objective tests which have been laid down (strength of grip, circumference of finger-joints). But the grip is weak if the forearm muscles are wasted, if the wrist is dropped or if the flexor tendons are adherent; and these cannot be restored in a few days. Finger-joints become enlarged because a busy person has to use them; when the pain is relieved he uses them still more, and the swelling remains.

These tests are but a random sampling of the many and ever-changing lesions of polyarthritis. Phenylbutazone passes a more valid test when it relieves an acutely painful joint, or when it enables a disabled patient to work again.

Summary.

1. Phenylbutazone ("Butazolidin") is safe (i) if it is not given to patients with chronic illnesses or aged over sixty-five years; (ii) if after the first two days the daily dose is kept at or below 400 milligrammes; (iii) if treatment is suspended as soon as toxic effects appear.

2. Toxic effects are due partly to overdosage, partly to age, but chiefly to unknown factors. Treatment may be resumed after they (except cardiac and severe gastric symptoms) have disappeared.

3. If the drug fails at first, it should be stopped after a week and tried again in three weeks. Patients should not be given long courses of ineffectual treatment, or alternating periods on and off. Patients who become refractory may respond again if the drug is withdrawn for three months.

4. Five hundred and ten out of 605 patients were relieved; 105 remain under treatment after a year. In 50 of them the symptoms are controlled by 100 milligrammes per day or less. Ninety-two patients (mostly suffering from localized rheumatism and gout) have ceased treatment and remain cured of their symptoms.

5. Phenylbutazone is more useful than cortisone because it suppresses the lesions of a wide range of rheumatic disorders. On inflamed joints it acts like cortisone, but through an unknown mechanism.

6. Phenylbutazone is not a general analgesic, but is specifically antirheumatic to every kind of rheumatic disorder. It should be judged on its own activity, and not because it is like amidopyrin or unlike cortisone.

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PSITTACOSIS: A VIRUS INVESTIGATION OF THREE CASES.

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IT is well recognized that infections with psittacosis virus are responsible for some cases of non-bacterial pneumonia. In the United States of America, Smadel (1943) found that 25% of the cases of sporadic atypical pneumonia he studied were due to psittacosis. Twenty years ago the view was commonly held that the disease was absent from Australia. At that time a stimulus to an investigation of psittacosis arose from the demonstration by Meyer and Eddie (1934) that the virus was present in parakeets imported from Sydney. Burnet, in 1934, demonstrated the presence of psittacosis in birds from Adelaide and Melbourne, and from 1935 to 1936 (Burnet and Macnamara, 1936) at least 17 human cases were said to have occurred in Victoria. The history of this subject has recently been reviewed by French *et alii* (1954) in this journal.

Psittacosis is usually regarded as being of minor public health importance. However, the severe, often fatal, course which the disease runs in elderly patients, and the fact that the incidence of psittacosis appears to be increasing in the United States of America and other countries (Sigel *et alii*, 1953) warrant a greater interest in this disease than has been generally shown in the past.

Psittacosis has been a notifiable disease in New South Wales since 1951. One case was reported in 1953 after laboratory confirmation of the clinical diagnosis had been obtained, and since that time several other cases have come to our notice. Two of the three patients whose case histories are presented in this paper were associated with sick birds shortly before their own symptoms developed.

The results recorded here indicate the usefulness of a complement fixation test in the diagnosis of psittacosis and also describe the use of the suckling mouse as a test animal in the primary isolation of the virus.

Clinical Records.

CASE F380.—The patient was a female, aged thirty-four years, who was admitted to hospital after three weeks' illness which commenced with a "cold". A swelling developed over the left mastoid. During this time she complained of severe pain in the right side of the neck and severe headache. She was feverish for three days with some delirium and continuous vomiting. Penicillin and sulphadiazine were given without noticeable effect. On her admission to hospital the patient was lethargic and complained of headache and nausea. This subsided during penicillin therapy. The patient was constipated. Examination revealed no weakness or loss of sensation. The chest was clear and there were no rales. Pain and occasional vomiting were associated with deep breathing. Five days after her admission to hospital pain was still associated with deep breathing and was located in the epigastrium and in the lower right ribs. Attempted blood culture on several occasions gave negative results, and an examination of the cerebro-spinal fluid revealed no abnormality. The patient made an uneventful recovery and was discharged from hospital ten days after her admission. It was found that she had recently purchased several birds from a bird fancier, and although some of these birds had died there remained a sick parrot, which was forwarded to this laboratory for examination. A visit to the shop from which these birds had been purchased resulted in the finding of a dead galah, which was also forwarded to this laboratory.[1]

CASE H532.—This patient was a female, aged thirty-two years, who resided in the Sydney metropolitan area. The onset of her illness was with fever and pain in the legs and in the lower part of the back one week prior to her admission to hospital. The patient complained of cough of four days' duration and of headache of one week's duration. Two weeks earlier she had purchased four finches, all of which died. The following day she began to feel drowsy and lethargic, a condition which persisted for one week. On examination of the patient, fine crepitations were heard at the base of the left lung. An X-ray film taken on her admission to hospital showed consolidation at both lung bases, apparently of pneumonic type. Three days after her admission to hospital chest examination revealed crepitations and rales at both lung bases. The patient complained of pain in the neck and in the upper part of the chest, but gradually improved, and fourteen days after her admission to hospital she was symptomless. She was discharged from hospital eighteen days after her admission.

CASE B538.—The patient was a male, aged fifty-four years, who resided in the Sydney metropolitan area. He was admitted to hospital three days after the onset of chest pains, coughing, malaise and headache. On his admission the patient was feverish and had a persistent cough. Pain was associated with respiration. Chest examination revealed a friction rub in the left upper part of the chest and fine crepitations at both lung bases. An X-ray examination revealed patchy pneumonic changes throughout the lung fields, with more confluent areas of consolidation in the left mid-zone. A provisional diagnosis of pleurisy and pneumonia was made. A fortnight after his admission to hospital general improvement in the patient's condition was noticed, and aureomycin, which had been given for four days, was suspended. The patient kept fowls, all of which appeared to be well. A psittacosis virus was not isolated from sputum samples sent to the virus diagnostic laboratory, but a rise in complement-fixing antibodies to psittacosis was demonstrated in the patient's serum (see Table I). The patient was discharged from hospital thirty-two days after his admission.

Results.

Isolation of Virus Strains.

Three strains of psittacosis were recovered. One was of human origin and the others were from birds associated with one of the patients.

F380.—A psittacosis virus could not be demonstrated in blood, sputum or throat washings collected from this patient fifteen days after the onset of symptoms. However, two strains of psittacosis were isolated from birds submitted for examination in connexion with this case.

Strain G389 was recovered from a dead galah (*Kakatoë roseicapilla*), post-mortem examination of which revealed a much enlarged spleen and a fibrous exudate in the peritoneal cavity. Impression films made from the spleen and stained with Machiavello's stain revealed very large numbers of the elementary bodies characteristic of infection with the psittacosis-lymphogranuloma group of viruses. This spleen was ground with sterile sand to a 10% suspension in nutrient broth. Streptomycin, 2·5 milligrammes per millilitre, and sulphadiazine, 0·5 milligramme per millilitre, were added and the suspension was allowed to stand for several hours in the refrigerator. The suspension was then inoculated into suckling mice and into four weeks old mice intraperitoneally. After four days the suckling mice had developed a peritoneal exudate, whilst the four weeks old mice were obviously sick, showing ruffled fur and a disinclination to move. Post-mortem examination of both groups of animals revealed a copious peritoneal exudate whilst the liver and spleen of some animals were covered with a fibrous exudate. Large numbers of elementary bodies were present in the smears made of the spleen and the peritoneal exudate of both the suckling and four weeks old mice. No significant organisms were grown on bacteriological culture of either the spleen or the peritoneal exudate. The spleens of the suckling mice were ground to a 10% suspension in nutrient broth and inoculated into eight days old chick embryos by the allantoic route. After six days' incubation at 37° C. the allantoic fluid was harvested, and Machiavello-stained

[1] Through the courtesy of the Board of Health.

smears showed very large numbers of elementary bodies. This fluid was used to prepare a complement-fixing antigen (*vide infra*).

Strain P388 was isolated from a sick parrot (*Platycercus eximius*), which was a pet of the patient F380. Post-mortem examination of the bird was conducted with findings similar to those of the galah—namely, enlarged spleen and a fibrous exudate covering both liver and spleen. A pool was made of the kidney, lungs, liver and spleen of this bird, and a suspension of these tissues when inoculated into four weeks old mice caused them all to become ill seven days after inoculation. The presence of elementary bodies in their spleens confirmed the view that a member of the psittacosis-lymphogranuloma group of viruses had been isolated. Inoculation of the cloacal contents of the parrot produced a similar result, and bacteriological cultures of the mouse tissue revealed occasional colonies of *Staphylococcus albus*.

H532.—Although sputum was collected from this patient on three successive days (October 12, 13 and 14, 1953), it was possible to isolate a virus from only one of these specimens—namely, that collected on October 13. The three sputum specimens were inoculated into both suckling and four weeks old mice intraperitoneally. Those inoculated with the specimens collected on October 12 and 14 remained asymptomatic throughout the observation period of twenty-one days. One of the suckling mice inoculated with the sputum taken on October 13 developed a peritoneal exudate seven days after inoculation, and examination of smears of the spleen of this animal showed numerous elementary bodies. The liver and spleen of this mouse were each inoculated into a further litter of suckling mice. These animals all developed a peritoneal exudate within four days of inoculation, and examination of smears of their spleens confirmed the presence of elementary bodies. Of the eight four weeks old mice inoculated with the specimen taken on October 13, one became ill fourteen days after inoculation, and elementary bodies were demonstrated in this animal's spleen. Mice were far more susceptible to infection with this particular strain than chick embryos. Inconsistent results were invariably obtained when attempts were made to passage the virus either by the yolk sac or allantoic route in eight days old chick embryos.

Complement Fixation Tests.

Complement-fixing antigens were prepared from infected allantoic fluid, as preliminary experiments indicated that they were superior to antigens prepared from mouse brains or livers. The infected allantoic fluid was harvested and heated to 53° C. for one hour. Phenol was added to give a final concentration of 0·5%. The fluid was cleared by centrifugation at 3000 revolutions per minute for ten minutes and stored at 4° C. The control antigen consisted of non-infected allantoic fluid subjected to the same treatment.

The test was performed by the use of the four-volume technique with normal saline as diluent and 1% sheep red blood cells in 1/1000 hæmolysin as the indicator system. The results of these tests are shown in Table I.

The paired sera of patients F380 and H532 both showed a marked rise in complement-fixing antibody on comparison of the convalescent with the acute phase specimen. The antibody level in the third patient, although not rising to the same degree, was also significant.

Discussion.

One interesting feature demonstrated by the foregoing results was the susceptibility of suckling mice to infection with the psittacosis virus. Such infected animals develop a blood-stained peritoneal exudate which considerably distends the abdomen and restricts the movement of the animal. This exudate may attain a volume of 1·5 millilitres in a week-old mouse and is usually rich in elementary bodies. The liver in such animals is very necrotic, especially near the periphery, and the peculiar distribution of the lesions gives the liver a superficial resemblance to tortoise-shell. The virus produces a generalized infection of the suckling mouse, and 10% suspensions of infected spleen, liver and brain may have I.D.$_{50}$'s of 10^{-5}, 10^{-5} and 10^{-4} respectively.

The incubation period of the disease is shorter in suckling mice than in four weeks old mice, and this is more apparent when one is dealing with relatively small amounts of infective virus. It will be noted that the incubation period in the primary isolation of the H532 virus in suckling mice was seven days, whereas in four weeks old mice it was fourteen days.

It has been emphasized in the past (Meyer and Eddie, 1951) that it is necessary to examine several specimens of sputum collected on successive days to provide the most favourable conditions for the isolation of the psittacosis virus. Case H532 in our series gives a further illustration of this need. It is, of course, important to submit specimens for virus investigations before antibiotic therapy is commenced.

If attempts at virus isolation are not successful, then one has to rely solely on serological evidence in the confirmation of the diagnosis, and here the correct collection of the serum specimens plays an important part. The acute phase specimen should be taken as early as possible after the onset of the disease, whilst the convalescent specimen may be collected seven to ten days later. The interpretation of serological results involving both acute and convalescent serum samples is much more reliable than when only one such specimen is available.

The notification of the first case in this series was followed by the laboratory confirmation of several other cases of psittacosis. However, it was thought that these cases constituted, not a small outbreak of the disease, but rather an enthusiastic interest in psittacosis associated with readily available virus diagnostic tests. The association of interest with incidence was also well illustrated by a table shown in French's paper on psittacosis in Australia (French *et alii*, 1954). The seventeen cases in Victoria were reported at a time when Burnet and his colleagues were conducting experiments with psittacosis. No notifications were reported during the war.

As a result of the work published herein, and from our experience in maintaining the psittacosis virus by passage through suckling mice, it is advocated that these animals

TABLE I.

The Results of Complement-Fixation Tests on the Serum of Patients with Psittacosis.

Patient.	Date of Onset.	Date of Collection of Serum.	Reciprocal of Serum Dilutions.[1]							
			5	10	20	40	80	160	320	640
F380	21/ 4/53	14/ 5/53	+	+	+	+	+	−	−	−
		26/ 5/53	+	+	+	+	+	+	+	−
H532	5/10/53	12/10/53	+	+	+	−	−	−	−	−
		18/10/53	+	+	+	+	+	+	+	−
B538	14/10/53	19/10/53	+	+	+	−	−	−	−	−
		27/10/53	+	+	+	+	−	−	−	−

[1] "+", fixation of complement; "−", no fixation of complement.

should be used as an adjunct to the four weeks old mouse and the chick embryo to facilitate the isolation of the virus.

Summary.

The laboratory findings in three cases of psittacosis are described. A psittacosis virus was isolated from one patient, whilst two strains of the virus were isolated from birds associated with a second case. A rise in the specific complement-fixing antibodies was demonstrated in each case. The suckling mouse has proved a useful test animal in these investigations.

Acknowledgements.

We wish to thank Dr. N. J. Symington and Dr. J. H. Fisher, of the Prince Henry Hospital, for bringing these cases to our notice.

Addendum.

Since this paper was submitted for publication six further cases of psittacosis have been revealed by the complement-fixation test, and one of these cases has been confirmed by virus isolation.

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AUTOGENOUS VACCINE THERAPY: A REVIEW OF CASES.

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THE value of autogenous vaccines in the treatment of chronic inflammatory conditions of an infective nature is difficult to assess, since other factors which may influence the course of the disease cannot be ruled out. If clinical improvement follows a series of injections, the sceptic may contend that benefit occurred in spite of rather than because of the vaccine treatment. It is admitted that such conditions as asthma and acne do disappear spontaneously in some cases, particularly in adolescents; then again, chronic complaints are often subjected to more than one therapeutic assault, and any result, good or bad, must be regarded as a resultant of a combination of factors.

Opinions differ widely on the indications for autogenous vaccine therapy, and it is not infrequently the patient who demands, rather than the doctor who suggests or advises, the trial of a vaccine for the relief of an intractable complaint. Patients who suffer from a chronic or recurring condition often develop a desire to try any measure which they wishfully think may hold out even the remotest chance of benefit. In the present series of 71 patients, from whom 55 replies were received, there are in fact, three medical practitioners, their complaints respectively being generalized fibrositis, recurrent naso-pharyngitis and sinusitis, and bronchial asthma.

This laboratory, from time to time, receives requests from practitioners for the manufacture of autogenous vaccines, and during the period from May, 1948 to December, 1950, 71 vaccines were prepared and issued. The present paper attempts to analyse the subsequent histories of the patients, and hence to draw conclusions which may serve as a guide to future procedure. It must be admitted that the outcome is far from conclusive.

Material.

The 71 patients were attended by 42 different practitioners, to whom a cyclostyled *questionnaire* was sent in respect of each patient. This *questionnaire* was circulated at the end of 1950, so that the results were assessed at least a year after the issue of the vaccine. The points covered included the following: (i) the age, sex and occupation of the patient; (ii) the condition for which the vaccine was prescribed; (iii) its duration; (iv) previous treatment and the results thereof; (v) the course of injections given and any reactions to inoculation; (vi) the result recorded (*a*) objectively by the doctor, (*b*) subjectively, in the patient's comments.

The conditions so treated include the following: (i) *acne vulgaris*; (ii) recurrent and chronic staphylococcal infections, such as furunculosis, carbuncles, *sycosis barbæ* and *otitis externa*; (iii) chronic pulmonary conditions including fibrosis, bronchiectasis and bronchial asthma; (iv) upper respiratory infections, chronic and recurrent; (v) arthritis and fibrositis; (vi) chronic osteomyelitis.

Culture material was supplied in the form of swabs from suppurative lesions, nasal and throat swabs, sputum and biopsy material such as extracted teeth and bone scrapings.

From these materials direct seedings were inoculated onto a number of slopes of 10% horse serum agar and, in addition, to other media such as blood agar, designed to isolate the infecting organisms in pure culture. The primary serum agar cultures were incubated at 37° C. for eighteen hours, some aerobically and some anaerobically, along with the blood plates. Examination of the blood plates served to determine whether the anaerobic cultures should be included in the vaccine. The growth from the serum agar slopes was then carefully scraped off the surface (care being taken to avoid including any of the medium), transferred to a sterile tube and emulsified in 0·5% phenol saline solution. The suspension was immediately standardized with the use of phenol saline to an opacity equivalent to 10^9 organisms per millilitre. This procedure must be completed without delay in order to avoid autolysis, which takes place with certain organisms.

The suspension was then incubated at 37° C. for twenty-four to forty-eight hours. After preliminary sterility tests it was bottled and finally retested for sterility.

The vaccine was then issued to the doctor with instructions for his guidance; it was suggested that after a preliminary intradermal test the course should consist of a first injection of 0·2 millilitre given subcutaneously, followed by weekly injections increasing by 0·2 millilitre up to 1·0 millilitre and then five or six weekly injections on this dosage. If a severe reaction should occur the dosage was to be reduced.

Results.

To date 56 replies have been received, 38 patients being male and 17 female; there was one child of unspecified sex. Their ages ranged from three to eighty-four years. Thirteen of these patients must be excluded, as they failed, for one reason or another, to complete the course or to produce any record.

The remaining 43 are listed in Tables I and II. They have been divided into two groups: (*a*) those with staphylococcal infections, (*b*) those with other infections. This division appears to be justified on preliminary examination of the series.

Staphylococcal Infections.

The 22 patients in the first group, who are described in Table I, were suffering from recurrent staphylococcal infection of the skin, the duration of which varied from two months to several years. Two doubtful cases have been included with a history under six months. Most of the patients had already been treated by chemotherapy, including penicillin and sulphonamides, and a few had received injections of colloidal manganese or X-ray therapy. Three had had at least one previous course of vaccine therapy with a "stock" preparation.

It appears that no less than 15 patients were much improved or cured, three showed some improvement, being well satisfied, while four were no better. Two of these

TABLE I.

Results with Autogenous Vaccines in the Treatment of 22 Patients with Staphylococcus Infections.

Patient's Number in Series.	Age. (Years.)	Sex.	Condition.	Duration.	Previous Treatment.	Result.	
						Objective.	Subjective.
2	—	M.	R.F.[1]	5 years.	Chemotherapy.	Almost free.	Gratified.
8	—	F.	R.F.	4 years.	Chemotherapy.	Cured.	Gratified.
29	9	M.	Chronic exfoliative dermatitis.	4 years.	Chemotherapy.	Cured.	Gratified.
30	—	M.	R.F.	4 years.	Chemotherapy.	Cured.	Gratified.
31	—	M.	R.F.	—	——	Cured.	Gratified.
36	78	M.	R.F.	Years.	Chemotherapy.	Some improvement.	Sceptical.
37	52	F.	R.F.	2 years.	Chemotherapy.	Not cured.	"Worth while."
41	—	M.	R.F.	5 years.	Chemotherapy, "stock" vaccine.	——	No benefit.
42	—	F.	R.F.	1 year.	Chemotherapy.	Cured.	Gratified.
43	—	F.	R.F.	2 months.	Chemotherapy.	Some benefit.	"Worth while."
46	3½	—	R.F.	1 year.	Chemotherapy.	Cured.	"Voluble objection."
47	—	M.	R.F.	—	X-ray, local.	Cured.	Gratified.
49	—	M.	R.F.	5 years.	Chemotherapy, "stock" vaccine.	——	No benefit.
50	40	M.	R.F.	15 years.	Chemotherapy, "stock" vaccine.	Cured.	Gratified.
54	16	F.	Recent axillary abscess.	8 months.	X-ray.	Cured.	Gratified.
58	33	M.	R.F.	3 months.	Chemotherapy.	Cured.	Gratified.
59	32	F.	R.F. (aural).	14 years.	Chemotherapy.	Cured.	Gratified.
61	23	M.	Recurrent infected sebaceous cysts.	7 years.	Local and surgical.	Cured.	Gratified.
62	26	M.	R.F.	Years.	Chemotherapy, X-ray.	Improved.	Gratified.
63	36	M.	R.F.	9 months.	Chemotherapy.	Cured.	Gratified.
66	40	M.	R.F.	18 months.	——	Cured.	Gratified.
71	18	M.	R.F.	—	Mixed vaccine.	No improvement.	Gratified.

[1] "R.F.", recurrent furunculosis.

"failures" had already had a course of vaccine therapy with a "stock" preparation.

Other Infections.

The second group, shown in Table II, comprises 21 miscellaneous cases and cannot be satisfactorily analysed.

Of the two patients with *acne vulgaris* who were treated with a vaccine of *Corynebacterium acnes*, one showed some temporary and one lasting improvement, though the latter patient admitted that he had to be careful of his diet. Both patients were adolescents, and any recovery might well have been due to natural causes.

There were five patients with chronic joint conditions who demanded vaccine therapy. Their organisms were cultured from various sites, but all except one patient received no benefit at all.

Seven patients had pulmonary conditions, some with long-standing anatomical damage. Three recorded improvement, and of these two were children, aged five and six years respectively, who suffered from asthma. In both these cases the parent thought the treatment well worth while.

Five other patients complained of frequent infections of the upper respiratory tract. Mixed vaccines were made from nasal and throat swabs or from sputum. Only one patient regarded the vaccine as of any value.

Discussion.

Although this is no more than an interim report, and it would be valuable to follow up the patients for a further extended period, by the time this review was made at least nine months had elapsed since the end of the course of vaccine therapy; perhaps one or two conclusions can be drawn from the series.

The first conclusion is that autogenous vaccine therapy seems to be well worth trying for recurrent cutaneous

TABLE II.

Results with Autogenous Vaccines in the Treatment of Miscellaneous Infections.

Patient's Number in Series.	Age. (Years.)	Sex.	Condition.	Duration.	Previous Treatment.	Source of Vaccine.	Result.
17	—	F.	*Acne vulgaris.*	2 years.	Various.	Pustule.	Temporary improvement.
22	20	M.	*Acne vulgaris.*	6 years.	Local.	Pustule.	Definite improvement; has to be careful of diet.
1	52	F.	Rheumatoid arthritis.	Years.	Various.	Urine, *Staphylococcus aureus.*	No change.
5	—	M.	Fibrositis.	3 years.	Local.	Extracted teeth, mixed culture.	No arrest of progress.
19	52	M.	"Rheumatism."	5 years.	—	Nose and throat swabs, mixed culture.	No arrest of progress.
23	—	F.	Rheumatoid arthritis.	Years.	—	Urine, mixed culture.	? Some benefit.
70	57	M.	Rheumatoid arthritis.	2 years.	—	Nose and throat swabs, mixed culture.	Marked improvement.
8	57	F.	Asthma.	?	—	Sputum, mixed culture.	No benefit.
16	—	M.	Bronchitis and fibrositis.	Years.	—	Sputum, mixed culture.	No benefit.
12	5	F.	Asthma and bronchitis.	Since infancy.	—	Nose and throat washing, mixed culture.	Improvement from attacks, turning point.
18	—	M.	Bronchitis.	10 years.	—	Sputum, mixed culture.	No benefit.
24	84	M.	Pulmonary fibrosis.	40 years.	—	Sputum, mixed culture.	? Benefit.
9	63	M.	Chronic nasopharyngitis.	—	—	Sputum, mixed culture.	Marked improvement, satisfactory.
10	—	F.	Recurrent colds.	—	—	Nose and throat swabs, mixed culture.	No improvement.
53	6	M.	Bronchial asthma.	1 year.	—	Nasal, mixed culture.	Definite improvement.
56	58	M.	Sinusitis.	5 years.	—	Nasal, mixed culture.	? Benefit.
64	37	F.	Chronic sinusitis.	3 years.	—	*Staphylococcus pyogenes.*	?? Temporary.
65	30	M.	Upper respiratory infection and asthma.	18 weeks.	—	Nasal, mixed culture.	? Temporary improvement.
67	55	M.	Bronchitis and sinusitis.	Years.	—	Sputum, mixed culture.	Definite improvement.
68	—	F.	Chronic arthritis.	2 years.	—	Nasal, mixed culture.	? Some improvement.
60	48	M.	Chronic osteomyelitis.	11 years.	—	Sinus, mixed culture.	No good.

infections of a staphylococcal nature. It may be noted that of the three "failures" two had previously received "stock" vaccines without benefit, and this may indicate that they were particularly refractory.

Secondly, little can be expected of autogenous vaccine therapy in cases in which there is old anatomical damage of joints or of the respiratory tract. There was, however, one such case (number 70) in which infection appeared to be less troublesome after a course of injections.

The third conclusion is that autogenous vaccines may be of value to children who suffer from recurrent attacks of bronchial asthma.

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THE NEGLECT OF THE GASTRO-DUODENAL MUCOSA BY CLINICIANS AND RADIOLOGISTS.[1]

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Sydney.

A RADIOLOGICAL examination of the upper part of the alimentary tract should include skiagrams which show the mucosal pattern from the fundus of the stomach to the jejunum. If it does not do this, it may be worthless or, even worse, misleading.

Fluoroscopy is not a satisfactory substitute for skiagrams. Skiagrams are necessary not only to permit leisured study and to demonstrate the lesion to the clinician who will be expected to treat it, but also because skiagrams show lesions which remain undetected during fluoroscopy.

The technical procedure for demonstrating the mucosal pattern should include the following: (i) posturing of the patient; (ii) the use of the air naturally present in the stomach to provide a double-contrast air-barium relief picture; (iii) compression with mechanical devices, dosed under fluoroscopic control; (iv) multiple spot-films, with narrow coning not only at the tube end, but also at the film end of the incident ray, so that Bucky grids may not be needed. The mucosal-relief method and the half-full stomach technique should supplement, not exclude, each other. Of the two, the former is the more valuable, but the less used in this city.

The skiagram taken with the patient in the supine position and with the stomach half full was discussed in the pages of this journal a few years ago, in respect of its value in revealing hiatus hernia and ulcer, and carcinoma in the cardiac end. It is to be noted that this skiagram provides, in addition, an excellent double-contrast picture of the mucosa in the antro-duodenal region. Skiagrams were then shown in which ulcers and carcinomata had remained undetected, "drowned" by barium suspension in the "full" or in the "half-full" technique, but probably easily demonstrable if "mucosagrams" had been taken. Other skiagrams were shown in which the lesions were concealed by the "full" or "half-full" technique, but detected by the radiologist who supplemented this technique with a mucosal-relief study. (Some of these were lent by Dr. H. Landecker, to whom my thanks are due.)

Chronic Gastritis.

Chronic gastritis is a serious disease. Not only may it deprive the patient of life through a catastrophic hæmorrhage, but also, through chronic ill health, it may rob its victim of much of the joy and happiness of living, and it may do these things through lesions which may be imperceptible to the naked eye. The disease is also of importance because it may give rise to carcinoma of the stomach and to ulcer of the flat (Konjetzny) type, and it may also simulate ulcer and cancer so closely that it is indistinguishable from them.

On the other hand, severe chronic gastritis may give no clinical evidence of its presence. For this reason there are British gastro-enterologists who, even today, deny the significance of the structural changes described as chronic gastritis. They might, with as much reason, deny the significance of gall-stones, carcinoma, ulcer of the stomach, chronic nephritis and many other diseases.

Just as the symptoms may be absent in some cases and characteristic in others, so also may the radiological, gastroscopic and test-meal findings, when taken by themselves, be characteristic in some cases, absent in others.

Thus, while any one method taken alone may be most misleading, a great measure of diagnostic accuracy may be achieved by using to the full the data contributed by all four methods—the clinical, the radiological, the gastroscopic and the fractional test meal. In some cases, laparotomy, gastrotomy and histological examination may be needed.

It should be noted that no one of these methods should be taken as superior to another. Each has its place. Each taken by itself may be misleading. For example, some clinicians and gastroscopists have fallen into serious error because they have used superficial inspection as the ultimate criterion for establishing the presence or absence of the disease. But the naked eye may fail to distinguish the disease, even when it is so far advanced as to lead to the death of the patient. It should not be forgotten that Hale-White and his colleagues saw only the effects of the disease, but they failed by their superficial inspection to see the disease itself and therefore they did not apprehend its presence. Similarly, in many of the specimens which I resect I can see no sign of disease in the mucosa, but the microscope shows advanced changes. If, then, the unimpeded naked eye can be so misleading, the gastroscope must also be rejected as the ultimate criterion for determining the presence or absence of the disease. (Schindler, defending the supremacy of the gastroscope, holds that the microscopic changes are due to the trauma of operation. But this position is quite untenable, for the histological signs of chronic gastritis and of recent trauma cannot be confused.)

If, then, the absence of symptoms and even of naked-eye changes cannot be taken as proof of the absence of the disease, what is the criterion upon which its presence or absence must be ultimately based? The answer is the microscope. The microscopic signs are threefold: (i) deformity, (ii) destruction of the "noble" elements of the mucosa, and (iii) infiltration by inflammatory cells and fibrous tissue.

Although it is impracticable to secure in every case a specimen for histological examination, we can make a diagnosis in most cases by a proper conjunction of the four methods of investigation mentioned above, and by evaluating the data derived from them.

In this task the radiologist has an important part to play. But his position is sometimes anomalous and unenviable. Although he can give valuable help, his gifts are sometimes not required, and sometimes not valued, for many clinicians neither understand the disease nor appreciate its importance, as in the following example.

Mr. A, aged thirty-seven years, had suffered for ten years from heartburn and indigestion, with occasional attacks of epigastric pain and vomiting, and from more frequent attacks of vomiting without pain, sometimes induced by coughing, the vomitus containing "phlegm" and the food just eaten. Four years previously he had been investigated at a gastro-intestinal clinic in a large hospital. No cause for the symptoms was found. A bland diet and medicine were prescribed, but these produced only partial relief, so he was sent to the psychiatrist, who produced no relief. The symptoms waxed and waned, and in recent months had become so severe that the patient returned to the clinic and underwent a repetition of investigations and treatment with similar unsatisfactory results; so he was again referred to

[1] The substance of a paper read at a meeting of the New South Wales Branch of the College of Radiologists (Aust. and N.Z.), on May 8, 1954.

the psychiatrist. But he did not go; he felt that his "nerves" were not the cause of his trouble, and in any case the psychiatrist had not helped four years previously. He felt that he had come to a dead-end, and as patients often do under such circumstances, he wondered if he had a cancer, which the doctors were concealing from him; or perhaps there was something wrong with his character and his symptoms were his own fault, or with his mind or brain. Perhaps even he would go mad. His anxieties and fears became greater, rather than less, after his treatment at the clinic. But the symptoms and signs of gastritis were there to be read by him who ran. When the patient was told that his symptoms were due to "catarrh" of the lining of his stomach, he went on his way rejoicing, in spite of the knowledge that his "weak stomach" would always be weak. The fear of the unknown had been lifted from him and understanding brought relief.

The Radiological Signs of Chronic Gastritis.

In some cases gastritis occurs alone, in others in conjunction with ulcer, carcinoma and hiatus hernia, gall-bladder disease and appendicitis.[1] The signs include the following: transverse striæ imposed upon the normal parallel longitudinal striæ of the body of the stomach so that a "step-ladder" appearance is produced; interruption of the longitudinal rugæ; coarse and fine mammillations; cauliflower and cerebriform patterns; polypoid appearances; the "Sydney-harbour" outline; the "craggy" outline; erosions (a term used to describe a breach in the mucosa which does not extend through the *muscularis mucosæ*) which produce spots or scalloping of the edge or the pseudo-niche; the changing irritable "writhing" pleomorphic stomach; the pyloric filling defect, sometimes with mucosal prolapse; various forms of chronic pyloric obstruction, due to marginal erosions, to hypertrophic stenosis; mucous effects, "flecked", "layered"; the ghost stomach; the "patchy" stomach, especially with ghost pattern in the antrum or along the lesser curvature and excessively coarse rugal pattern along the greater curvature; the totally "disrupted" mucosal pattern. Berg lays great stress upon the stiffness of the rugæ detected by palpation under the fluoroscopic screen.

Some of these radiological signs depend upon a disturbance of the living reactions (secretory, motor and vascular) of the stomach; others depend upon gross anatomical disruption of the mucosa by erosions and small-celled infiltration and fibrosis.

Difficulties.

Two of the difficulties which impeded the recognition of chronic gastritis have already been briefly dealt with—firstly, that advanced gastritis may cause no symptoms, and secondly, that it may be imperceptible to the naked eye. There are other difficulties, such as the following: Where is the dividing line between the normal and the diseased? What causes the "ghost" appearance? How can the "ghost" appearance be a sign of disease, since the rugæ may appear normal when the barium suspension is first swallowed, and ghost-like only later? Moreover, the rugæ may appear normal and then become ghost-like if the stomach is distended by giving the patient an effervescent mixture.

It may be remarked at once that the disappearance of the rugæ in chronic gastritis cannot be satisfactorily explained as a result of over-distension of the stomach, because the ghost pattern is noted in chronic gastritis in states of minimal distension. Moreover, a very frequent appearance in the almost empty diseased stomach is a disappearance of the rugæ on the lesser curvature side, and in the same skiagrams a gross exaggeration and deformity on the greater curvature side; in these cases examination of the resected specimen shows a flattening of the mucosa on the lesser curvature with underlying thickening and fibrosis. Chronic gastritis is a patchy disease.

These difficulties disappear when one succeeds in apprehending the reactions of the living stomach. To succeed in this, we may have to uproot long-ingrained ideas about a more or less static stomach, based upon our early training and our macroscopic and microscopic study of dead material.

Actually the mucosa is a tremendously sensitive, labile and dynamic tissue. It is an erectile, sponge-like organ, by virtue of the vascular coils within it and of the muscular fibres which connect the *muscularis mucosæ* to the surface epithelium; highly motile and powerfully secretory; ever-changing and responding to its environment, mechanical chemical and nervous. Tickle the exposed mucosa with a soft brush and it secretes freely. Drop iodine upon it and we fail to stain it, because the iodine is washed away so vigorously that it can make no contact with it. Alter the emotions and the gastric mucosa responds.

The dividing line cannot be recognized between the normal and the diseased, because there is no dividing line. The reactions of the normal do not differ essentially from the reactions of the diseased mucosa. The difference is in degree only. The diseased stomach is an irritable or weak stomach which responds more violently and more quickly and to lesser stimuli than does a normal stomach. This is true both of its clinical and of its radiological responses. Thus the rugæ may disappear and the stomach appear ghost-like, even at the beginning of the examination. In other patients it may appear normal at first, but a longer contact with the barium suspension may induce the ghost appearance to appear later, as a free discharge of protective fluid coats the mucosa. This accumulation of fluid, as the examination is prolonged, may be demonstrated by the radiologist. Similarly, effervescent mixtures may cause the disappearance of the rugæ, not only by distension, but also by chemical irritation. The acid in the mixture is an irritant. So also is the sodium bicarbonate, which has been described by Hurst as the most powerful gastric secretagogue known, with the exception of histamine. The resulting salts are also irritants. The distinction then is this: the normal stomach may be made to appear ghost-like with an effervescent mixture; but the diseased stomach appears ghost-like in response to milder stimuli, which do not produce this appearance in the normal stomach.

The value of the radiological examination thus depends partly upon the fact that the conditions of the examination are more or less standardized by each radiologist as he develops his own technique. These conditions include the duration of examination and the quality of the barium used, and the nature of the suspending agent. A coarse granular barium sulphate is much more irritant to the stomach than a refined preparation. Rugagrams taken at the beginning of the examination are more likely to be successful than rugagrams taken at the end. It is of interest to note that patients with severe gastritis not infrequently complain that the barium meal has upset their stomach, and I have learnt to accept this complaint as strong evidence of gastritis in patients with no pyloric obstruction or carcinoma.

Thus under such standardized conditions the radiologist begins to acquire within his own mind his own norms. He begins to recognize the average response to the conditions of his examinations, and he divides stomachs into groups—those which react in average fashion, which he may regard as normal, and those which react irritably, which he may regard as diseased.

When the radiologist assesses the stomach as being excessively irritable, if he questions the patient he will find in many cases, too many to be explained by coincidence, that the stomach will not tolerate certain foods, or certain drinks, or large quantities, and that all these cause nausea and epigastric discomfort, perhaps vomiting soon after ingestion of the food that was eaten, with perhaps a little "slimy" fluid. The patient himself would thus readily agree with the radiologist's assessment that the stomach is "irritable". The patient would probably call it "weak".

In some patients the recent onset of digestive symptoms and a gross deformity in the radiological appearance have suggested carcinoma, and the gastroscopic findings have either been equivocal or have confirmed the suspicions of neoplasm. At operation the surgeon is surprised to find

[1] At this stage Dr. Kinsella showed a series of skiagrams to illustrate the radiological signs of chronic gastritis.

no abnormality or perhaps a little soft, diffuse thickening. On opening the stomach he palpates no more than a soft, smooth mucosa.

An understanding of gastritis provides the only means whereby these and many other clinical and radiological problems may be understood.

Some radiologists state that they find the foregoing radiological signs of gastritis in a large majority of their patients. They look upon this as a difficulty, and hesitate to accept the changes as signs of disease. For me, the frequency of these signs is not a reason for doubt, but rather a confirmation of their importance. It must be remembered that the great majority of patients who undergo radiological examination of the stomach are suffering from gastric symptoms, and that gastritis may well be present, either with or without ulcer, neoplasm and other diseases. I would go further. Even among people who have never been referred for barium meal examination and who have never had the slightest gastric symptom, there are a number in whom the signs would be found. But among these same apparently normal people there are a number who will in the future be stricken by an unheralded hæmatemesis, and a further number to whom increasing years will bring gastric discomfort. These are people with latent gastritis. In some it is latent throughout life, and in others, as the years pass, it becomes manifest through symptoms, just as a renal or cardiac or hepatic lesion, inflicted by an infectious disease in early life, may remain latent until the stresses of continued existence lead in middle life or old age to further structural deterioration and to obvious dysfunction. The radiologist is understandably wary of "over-reading" his skiagrams; but he can remain on safe ground by objectively describing the deviations which he sees, whether of function or of structure (the increased irritability, the segmentation of rugæ, the osteophyte, the calcified vessel *et cetera*), leaving to the clinician the task of evaluating the significance to the particular patient of these deviations. The radiologist is on safe ground if he reports: "There is such-and-such a deviation." But he is not on safe ground if he adds or implies: "It is of such-and-such significance. Reexamination in four weeks, gastroscopy, sigmoidoscopy or retrograde pyelography is indicated." It is for the clinician to make these additions. If the referring clinician is unable to do this, the radiologist should not be trapped into the false position of undertaking a task which does not fittingly belong to him. Instead, a third opinion should be sought from a consultant clinician.

A great mass of combined clinical, radiological and histological evidence has confirmed this conception, and I may fittingly conclude with the statement of Berg, the doyen of gastric radiologists and professor of medicine in Hamburg, that "the radiological diagnosis of gastritis critically based on anatomical changes has been of great importance in gastro-intestinal work".

A SURVEY OF ACCIDENTAL POISONING IN CHILDREN DURING THE PAST THREE YEARS AT THE TOWNSVILLE GENERAL HOSPITAL.

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THE Townsville General Hospital is the base hospital for northern Queensland and serves a wide area. Our purpose in presenting a record of accidental poisoning in children admitted to the Townsville General Hospital during the period from April 1, 1951, to March 31, 1954, is to compare the type of poisons and their incidence with that of similar studies carried out recently in Britain and Queensland.

Swinscow (1953) found no increase in accidental poisoning in children between 1931 and 1949; but the death rate rose steadily from 1949 to 1951, and the increase was particularly sharp from medicaments. He records that during the decade 1940 to 1949 there were 218 deaths among children aged one to four years from accidental poisoning in England and Wales, and that the death rate among children aged up to five years was considerably greater in boys than in girls.

Craig and Fraser (1943) investigated the accidental poisoning of children in Scotland, and found that among children attending two Scottish hospitals poisoning has become more frequent during the last twenty years. They recorded that the most frequent household poisons were kerosene, caustic alkalis and phosphorus (rat poison). They showed that, next to poisoning by barbiturates, ferrous sulphate was the commonest in the group of medicaments, and that the latter is a frequent and very dangerous poison in Britain at present.

Craig (1953), reporting 74 cases of poisoning by volatile oils, recorded that camphorated oil and oil of turpentine were the oils most commonly ingested, but that oil of wintergreen accounted for three times as many deaths as camphor, the second commonest lethal agent.

Clark Ryan (1951), in a comprehensive survey of poisoning in children in Queensland, reported that the age of maximum incidence was the second year of life, and that male children were involved twice as frequently as females. Ingestion of kerosene was responsible for one-half of the total number of cases, being followed in importance by phenobarbitone. Clark Ryan showed that poisoning in children increased sharply in the Brisbane Children's Hospital from 1946 to 1949.

In Table I are set out the data concerning patients admitted during the past three years to the Townsville General Hospital, Queensland.

Discussion.

From Table I it will be noted that the total number of cases of poisoning was 57; 29 subjects were males and 28 females. There were 36 cases of kerosene poisoning, 63% of the total. With the exception of one case, complicated by pneumonia, all the children suffering from kerosene poisoning made an uneventful recovery. The child suffering from arsenical poisoning had ingested a powder which contained 35% of arsenic, and recovered only after a very stormy pasage which, in addition to routine treatment, included the administration of dimercaptopropanol (BAL). There were 30 cases of poisoning in the age group one to two years, 15 in the age group two to three years, and eight in the age group three to four years. The remainder were aged above four years.

Swinscow recorded that the greatest number of deaths were in the ages from one to five years, and that the incidence of death was considerably greater among boys than among girls.

Clark Ryan found that the age of maximum incidence of poisoning was the second year of life, and that male children were involved twice as frequently as females.

In our series of cases of poisoning there were no deaths. The age of maximum incidence coincides with that of Clark Ryan's cases, but in contradistinction to his findings of a preponderance in the male our cases showed no difference in the sex incidence. With regard to the type of poisoning, Swinscow records that the chief increase in accidental poisoning was due to medicaments. This is not borne out by our table. Craig and Fraser's report shows kerosene to be the most frequent household poison, and this observation concurs with our findings. Clark Ryan records that kerosene was responsible for more than half the total number of cases, being followed by phenobarbitone. Our figures coincide with Clark Ryan's in respect to kerosene poisoning. The maximum age incidence in our series of accidental poisonings occurred in the toddler group. This suggests that the poison must have been within reach.

In Queensland it is very common to store kerosene and allied noxious fluids in ordinary bottles similar to those used for soft drinks, and therefore there can be little doubt that these two factors, ease of access and type of container, are responsible for the high incidence of poisoning by the common household noxious substances. We agree with Clark Ryan's conservative approach to the treatment of kerosene poisoning. We submit that, because of the unpleasant taste of these fluids, the amount ingested is usually very small and that rarely is it necessary to carry out stomach lavage. We would adopt this procedure only when we had reason to suspect that a considerable quantity had been consumed.

TABLE I.

Patient.	Age. (Years.)	Sex.	Poison.[1]
April 1, 1951, to March 31, 1952.			
1	1	F.	Kerosene.
2	3	M.	Kerosene.
3	1	M.	Kerosene.
4	3	M.	Kerosene.
5	1	M.	Kerosene.
6	2	M.	Kerosene.
7	1	M.	Kerosene.
8	2	M.	Kerosene and paint.
9	1	F.	Tobacco.
10	1	F.	"Brasso."
11	14	F.	Phenobarbitone.
April 1, 1952, to March 31, 1953.			
12	1	F.	Cockroach poison.
13	2	M.	Kerosene.
14	3	M.	Kerosene.
15	4	F.	Vegetable, unknown.
16	3	F.	Vegetable, unknown.
17	2	F.	Kerosene.
18	1	M.	Kerosene.
19	1	M.	Kerosene.
20	1	F.	Kerosene.
21	1	F.	"Shellite."
22	2	F.	Unknown.
23	1	F.	Kerosene.
24	1	F.	Kerosene.
25	1	M.	Kerosene.
26	1	F.	Arsenic.[2]
27	2	M.	Kerosene.
28	1	F.	Kerosene.
29	1	M.	Petrol.
30	1	M.	"Shellite."
31	1	M.	Kerosene.
32	1	F.	Kerosene.
April 1, 1953, to March 31, 1954.			
33	4	F.	Kerosene.
34	3	M.	Kerosene.
35	2	M.	Kerosene.
36	3	F.	Kerosene.[3]
37	2	M.	"Mycozol."
38	1	M.	Kerosene.
39	1	F.	Turpentine.
40	2	F.	Phenobarbitone.
41	2	F.	Fly spray.
42	1	F.	Kerosene.
43	2	M.	Kerosene.
44	1	M.	Kerosene.
45	3	M.	Kerosene.
46	2	M.	Kerosene.
47	1	F.	Iron oxide.
48	6	M.	Kerosene.
49	2	M.	Kerosene.
50	1	M.	Kerosene.
51	2	M.	Methylated spirit.
52	1	F.	Kerosene.
53	1	F.	Kerosene.
54	1	F.	Phosphorus.
55	2	F.	Ferrous sulphate.
56	1	F.	Paint.
57	3	M.	Phenobarbitone.

[1] The result in all but two cases was uncomplicated recovery.

[2] Recovery followed a stormy passage.

[3] Recovery followed pneumonia.

We suggest that, in order to reduce the incidence of accidental poisoning in children, parents should always keep any noxious substance out of reach of small children. Even aspirin, including proprietary preparations containing this product, as well as laxatives, can be lethal to young children in moderate amounts.

We submit that legislation might be introduced in Queensland requiring that kerosene and similar household substances be sold only in coloured bottles displaying a poison label.

Summary.

A record of acute accidental poisoning occurring during the past three years at the Townsville General Hospital is presented. Comparison is made between the type of poisons ingested and their incidence with that of other studies elsewhere. Suggestions are submitted in an endeavour to reduce the mortality and morbidity of accidental poisoning in children.

Acknowledgements.

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Reviews.

A Handbook of Diseases of the Skin. By Herbert O. Mackey, F.R.C.S.I., L.R.C.P.I., D.P.H. (Univ. Dub.), L.M., F.R.I.A.M.; Second Edition; 1953. London: Macmillan and Company, Limited. 9" × 5½", pp. 254, with 142 illustrations. Price: 7s. 6d.

THIS work has apparently met with popular approval, as a second edition has appeared within eighteen months of the first publication. The general arrangement of the text has not been altered, the first seven chapters dealing with anatomy, physiology, symptomatology, ætiology and treatment, and the remaining twenty-six with general dermatology. No extra chapters have been included, but there has been added an appendix containing, amongst other things, a brief survey of the use of sulphonamides and antibiotics in dermatology. There has also been added a short formulary.

In a comprehensive manual of less than two hundred and fifty pages the style is necessarily dogmatic, and the fact that there are a number of statements with which many dermatologists will disagree hardly calls for criticism. The recommended topical use of sulphonamides, penicillin and benzocaine will meet with strong disapproval in most dermatological circles.

The paper, printing and binding are good, and the illustrations are, with few exceptions, excellent. This book will undoubtedly maintain its present popularity.

The Eczemas: A Symposium by Ten Authors. Edited by L. J. A. Loewenthal, M.D. (Liverpool), M.R.C.P. (London), D.T.M. and H. (Liverpool); 1954. Edinburgh and London: E. and S. Livingstone, Limited. 10" × 6¼", pp. 276, with 77 illustrations. Price: 35s.

IT is difficult to edit a book on a subject such as eczema, suitable for the general practitioner, dermatologist, pædiatrician, allergist and other specialists. The ten contributors to this volume have done their best, but it is impossible to please everyone, and the general practitioner may justifiably feel that the practical interest of this book ceases for him after the opening statement has been made. He will feel that psychosomatic factors deserve more than the scant attention accorded them, even if this attention is directed towards their minimization. The scientific elucida-

tion of psychosomatic factors in dermatology is admittedly difficult, and the efforts made here to explain nummular eczema in a scientific fashion have not been entirely successful.

The first four chapters are full of meat and very readable. Loewenthal rightly points out that the term "allergy" is frequently and grossly misused. The tendency is for all doctors, specialists or not, to use the term loosely and without analysis.

Probably the best chapter in the book is Chapter II by F. Ray Bettley. This is a clear and enjoyable exposition of contact eczema. Probably his task would be easier than that of H. Haxthausen, who deals with the theoretical considerations of allergic eczema; however, Haxthausen's work in this chapter is very meritorious when viewed from a dermatologist's point of view. W. Burckhardt's contribution in Chapter VI dealing with the resistance of the skin to alkalis, acids *et cetera* includes technical data more suited to an investigative journal, although the second part of his chapter is stimulating. We should be interested to learn in the future how Burckhardt progresses with his pre-occupational skin testing mentioned on page 105. This seems to be a brave aproach.

The book is very well edited, well arranged and of good quality paper, and the illustrations are relevant and technically good. It is a volume that can be recommended to all except the busy general practitioner.

The Physiology of Man. By L. L. Langley, M.D., Ph.D., and E. Cheraskin, M.D., D.M.D.; 1954. New York, Toronto and London: McGraw-Hill Book Company, Incorporated. 9¼" × 6¼", pp. 622, with 180 illustrations. Price: $5.50.

"THE PHYSIOLOGY OF MAN" presents a story which bears the same relationship to the subject, according to Lovatt Evans, as does the gospel of a southern revivalist to Holy Writ. If nobody knows the answer, the authors make one up; unfortunately they sometimes make up an answer contrary to known fact. The illustrations are technically excellent, but more suitable to a comic strip; in the endeavour to be exhilarating they often mislead—for example, Figures 87, 95. There are no references to original authorities.

Pædiatrics for the Practitioner. Edited by Wilfrid Gaisford, M.D., M.Sc., F.R.C.P., and Reginald Lightwood, M.D., F.R.C.P., D.P.H.; 1953. London: Butterworth and Company (Publishers), Limited. Sydney: Butterworth and Company (Australia), Limited. Volume I. 10" × 7", pp. 612, with 102 illustrations. Price: 90s.

THIS volume is the first of a series of three designed to provide the family doctor with an up-to-date text-book for the diagnosis and treatment of the common disorders of infancy and childhood. The bulk of the contributions are from English writers, but there are some chapters from Australian, Canadian and South African authors. As the editors state in their preface, "hospital care is only secondarily considered". For this reason alone, the Australian practitioner, who is accustomed to assume a greater responsibility in the care of his patients than his English counterpart, will find this an unsatisfying book. It is of interest to note that those sections emanating from Dominion sources are on the whole of the greater practical value. For example, the chapter on congenital heart disease clearly and succinctly describes how the general practitioner, using only clinical evidence and simple investigations, may make a reasonable attempt at anatomical diagnosis in this difficult field. In addition the possibilities of surgical treatment are briefly indicated and advice as to management and prognosis is given. Unfortunately many of the sections fall below the standard of this one, some subjects are dealt with too briefly, others of importance are omitted altogether. For instance, although this volume includes the section on the cardio-vascular system, the dose of digitalis and its preparations to be used in childhood is nowhere stated, nor is any mention made of idiopathic myocarditis of infancy, a condition perhaps less rare than is usually thought.

The book is divided into ten parts: "The Child in Health" provides a brief but clear description of normal physical, mental and emotional development, and sensible suggestions for the management of the normal child. "The Newborn Baby" contains adequate chapters on ante-natal pædiatrics, the causes of stillbirth, neonatal death and prematurity, congenital abnormalities, trauma and diseases of the newborn. The chapter on the management of the baby, both full-term and premature, following delivery is poor and incomplete. "The Infant" is largely concerned with feeding and is on the whole satisfactory, but would have been more valuable if greater detail of Waller's technique of ante-natal management of the breasts had been included. "Preventive Pædiatrics" contains a useful and interesting chapter on the influence of heredity as a cause of disease and gives probability rates for the occurrence of hereditary disease in other siblings. There are further chapters dealing with immunization, dangers and difficulties arising from hospitalization, mortality and morbidity statistics, public health and English law as it relates to the care of children. "Diagnosis" describes clinical examination and abnormalities of stools, and has a useful section on the possible significance of some of the commoner signs and symptoms met with during childhood.

The general section contains ten chapters on heterogeneous subjects. "Physical Therapy" is excellent and the sections on anæsthesia, shock and burns, and unexpected sudden death in infancy are also good. The remaining sections, dealing with transfusion, drugs, chemotherapy, poisoning, simple procedures and home nursing are inadequate, not up to date or occasionally inaccurate.

"Nutrition and Malnutrition" adequately covers these subjects as well as vitamin deficiencies. Dehydration and acid-base disturbances are very poorly dealt with. "The Cardio-Vascular System" describes normal findings and has good reviews of rheumatism, congenital heart disease and bacterial endocarditis. "The Blood" outlines the subject well. There are chapters on normal findings, anæmias, bleeding diseases and leuchæmia. "Malignant Disease in Childhood" is a short but interesting section providing a good survey of the subject and a balanced statement of the place of surgery or irradiation in the treatment of the different types of cancer.

The format is similar to that of the publishers' other encyclopædias. On the whole the illustrations are well produced, but there is little point to some of them. For instance, it would appear unnecessary to illustrate how to inject hyaluronidase into the rubber tubing of a subcutaneous infusion. Three printer's errors were discovered.

The Year Book of Pathology and Clinical Pathology (1953-1954 Year Book Series). Edited by William B. Wartman, B.S., M.D.; 1954. Chicago: The Year Book Publishers, Incorporated. 8" × 5½", pp. 486, with 174 illustrations. Price: $6.00.

FOR some years past, this Year Book has had an editor for each of its separate sections on pathology and clinical pathology, but it has now been taken over by a new editor who is responsible for both parts of the book. However, he has retained the previous practice of including a number of special articles by other contributors. In the section on pathology is an article on bronchiolar (alveolar cell) tumours of the lung by Thomas C. Laipply, and in the section on clinical pathology are articles on isotopes in clinical chemistry by D. A. McFadyen, on diagnostic methods useful in detecting mycotic infections by R. D. Baker, and on the clinical significance of abnormal human hæmoglobins by Karl Singer. The opening chapter in the first section deals with general pathology, and has subdivisions on inflammation and healing, infectious diseases, drug toxicity, radiation effects, neoplasia and miscellaneous topics. There are also chapters on the cardio-vascular, hæmatopoietic, respiratory, alimentary, musculo-skeletal, urinary and male and female genital systems, also on the endocrine glands, the nervous system and organs of special sense, and the skin. Chapters in the section on clinical pathology are devoted to three main topics: clinical chemistry; microbiology, with subdivisions on the mycoses, bacteria and viruses, bacterial sensitivity and mode of action of antibiotics, spirochætes and parasites, and immunity and serology; hæmatology, covering general aspects, bone marrow, disorders of coagulation and problems of transfusion and blood banks. This volume will appeal not only to the pathologist and clinical pathologist, but to all those who appreciate the fact that a knowledge of pathology is essential to the basic understanding of a great many medical and surgical problems.

The Year Book of Neurology, Psychiatry and Neurosurgery (1953-1954 Year Book Series). Neurology, edited by Roland P. Mackay, M.D.; Psychiatry, edited by Nolan D. C. Lewis, M.D.; Neurosurgery, edited by Percival Bailey, M.D., and Oscar Sugar, M.D.; 1954. Chicago: The Year Book Publishers, Incorporated. 8" × 5½", pp. 604, with 132 illustrations. Price: $6.00.

THE three sections of this Year Book are handled quite separately by their individual editors, who in each case contribute a brief introduction in which they evaluate major changes in their own particular spheres of interest. In

the section on neurology, a new emphasis is introduced with an opening chapter on neurophysiological mechanisms, which shows a welcome movement of the literature away from the false separation of anatomy from function. This chapter is subdivided into sections on sensory mechanisms, visceral mechanisms and motor mechanisms. Other chapters are concerned with pathology, exogenous toxins, infectious diseases (meningitis, encephalomyelitis, poliomyelitis), vascular disturbances, degenerative diseases (neurodegenerative diseases, multiple sclerosis, muscular dystrophy, *myasthenia gravis*), metabolical disorders, convulsive disorders, cranial and spinal nerves and diagnostic and therapeutic methods. The section on psychiatry has chapters dealing with general topics, child psychiatry, schizophrenia, affective disorders and miscellaneous psychotic reactions, organic disorders and toxic reactions, psychoneuroses and psychosomatic disorders and therapy (psychotherapy, electric shock therapy, psychosurgery) and miscellaneous procedures. The section on neurosurgery has chapters on tumours of the brain and of the spinal cord, infections (chronic and acute), malformations, vascular lesions, trauma, pain, psychosurgery, epilepsy, dyskinesia, herniated disks, the sympathetic system, the hypophysis, röntgenology, technique and miscellaneous topics. The physician, the surgeon, the general practitioner and many specialists, particularly those primarily concerned with the subjects of this Year Book, will find in it much interesting material for their consideration.

Annual Review of Medicine. Edited by Windsor C. Cutting and Henry W. Newman; 1954. Stanford, California: Annual Reviews, Incorporated. Volume V. 9" x 6", pp. 500, with one text figure. Price: $7.00.

WHEN the first volume of this series was planned, the editors had in mind "the periodic review of more or less all of medicine, presented so as to be interesting to an intelligent physician of almost any special persuasion". With experience, this policy has been modified, and authors are now requested to write in some detail on that portion of the general field they know best and to review briefly only the salient advances in the rest of the field. The editors' view is that this lends inspiration to the writing and to the reading, and that "next year's author will fill in the details in another segment". Thus, in the present volume, the section on infectious diseases is devoted to problems of antimicrobial therapy, that on diseases of the reticuloendothelial system and hæmatology to purpura, that on neoplastic diseases to medical care in cases of advanced cancer, that on diseases of the nervous system to metabolic aspects of some neurological and muscular disorders, that on diseases of the respiratory system to circulation through the lung and to diffusion of gases, that on physical agents and trauma to mechanisms and therapy of traumatic shock, that on radioactivity to biological effects of ionizing radiations. The other sections, which deal with their subject in a more general way, are concerned with diseases of the gastrointestinal tract, diseases of the cardio-vascular system and of the kidney, endocrinology, allergy, psychiatry, anæsthesia, laboratory aids to diagnosis and therapy, toxicology, dermatology, pædiatrics and dentistry. In each case the article is a critical review of the current literature rather than a mere summary of what others have written. This is an excellent reference book to current thought in medicine. Its value is enhanced by an annotated list of reviews to be found in current medical publications.

Modern Trends in Diseases of the Ear, Nose and Throat. Edited by Maxwell Ellis, M.D., M.S., F.R.C.S.; 1954. London: Butterworth and Company (Publishers), Limited. Sydney: Butterworth and Company (Australia), Limited. 10" x 7", pp. 480, with 140 illustrations. Price: 90s.

IN this book, the presentation of ideas has been the chief concern of the two dozen contributors, rather than routine descriptions more properly found in text-books. During the gradual accumulation of clinical experience, coupled with advances in the primary sciences, fresh conceptions of old problems gradually arise generally by shifts in emphasis of some aspects.

The approach to acute infections as the result of the introduction of antibiotics is fully covered in the more obscure as well as the simpler conditions. The present conception of the functions of the labyrinth, the testing of that organ and aural vertigo are admirably presented in detail. New and considerable advances in satisfactory hearing aids are described.

In the chapter on the surgery of non-suppurative deafness, the contributor discusses the possible future application of the fenestration operation to healed middle ear suppuration and healed radical mastoid operation, the difficulties to be overcome and prospects for further development of technique. A general review of the present position and difficulties of fenestration is also given.

There are further chapters on the non-surgical treatment of deafness, chemotherapy of acute aural infections, acute *otitis media* and chronic otorrhœa. In the last named, the author strongly advocates permeatal attico-antrotomy as distinct from operation by Popper's transmeatal route and reserves the classical radical postaural transmastoid operation for the occasional cases in which pneumatization is widespread or when intracranial complications are suspected.

Chapters on intracranial complications of aural infections and on facial paralysis complete the first half of the book devoted to the ear.

There are very good discussions on so-called "nasal catarrh", this increasingly popular symptom, and also on upper respiratory tract infections in children, complications of sinus infections and tumours of the naso-pharynx.

Further chapters deal with present views on endoscopy and tuberculosis of the upper air passages as well as with recent modifications in surgical technique in stenosis of the larynx, laryngeal paralysis, cancer of the larynx, pharyngeal diverticulum, cancer of the pharynx and congenital anomalies of the œsophagus.

The book itself is well produced and adequately illustrated, and constitutes a praiseworthy attempt to justify its title. It should find a place in the library of every oto-rhino-laryngologist who desires to keep abreast of current thought.

Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"Notes on Infant Feeding", by Stanley Graham, M.D., F.R.C.P. (Ed.), F.R.F.P.S. (Glas.), and Robert A. Shanks, M.D., M.R.C.P. (Lond.), F.R.F.P.S. (Glas.); Fourth Edition; 1954. Edinburgh and London: E. and S. Livingstone, Limited. 7¼" x 5", pp. 74. Price: 4s. 6d.

Intended primarily for medical students.

"Recent Advances in Dermatology", by W. Noel Goldsmith, M.A., M.D. (Cantab.), F.R.C.P. (London), and Francis F. Hellier, O.B.E., M.A. (Cantab.), M.D., F.R.C.P. (London); Second Edition; 1954. London: J. and A. Churchill, Limited. 8" x 5½", pp 472, with 33 illustrations, five in colour. Price: 42s.

The first edition appeared as long ago as 1936.

"Recent Advances in Pædiatrics", edited by Douglas Gairdner, D.M., F.R.C.P.; 1954. London: J. and A. Churchill, Limited. 8" x 5½", pp. 480, with 117 illustrations. Price: 42s.

Consists of twenty chapters by eighteen authors.

"Cleft Palate and Speech", by Muriel E. Morley, B.Sc., F.C.S.T.; Third Edition; 1954. Edinburgh: E. and S. Livingstone, Limited. 7¼" x 5", pp. 194, with 63 illustrations. Price: 17s. 6d.

The first edition appeared in 1945.

"Emergencies in Medical Practice", edited by C. Allan Birch, M.D., F.R.C.P.; Fourth Edition; 1954. Edinburgh and London: E. and S. Livingstone, Limited. 8¼" x 6", pp. 622, with 143 illustrations, nine in colour. Price: 32s. 6d.

The first edition was published in 1948.

"Hospital and Community", by T. Ferguson and A. N. MacPhail; 1954. London: Oxford University Press. Melbourne: Oxford University Press. 9" x 6", pp. 166. Price: 17s. 9d.

Deals with the social and environmental factors of hospital practice.

"Fluid Balance in Surgical Practice", by L. P. Le Quesne, M.A., B.M., B.Ch. (Oxon.), F.R.C.S. (England); 1954. London: Lloyd-Luke (Medical Books), Limited. 9" x 5", pp. 138, with 41 illustrations. Price: 17s. 6d.

Based on the Moynihan Prize Essay for 1953.

The Medical Journal of Australia

SATURDAY, SEPTEMBER 25, 1954.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of the article. The abbreviations used for the titles of journals are those adopted by the Quarterly Cumulative Index Medicus. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

GENERAL MEDICAL PRACTICE.

PRACTICALLY the whole of the *British Medical Journal* of September 26, 1953, was devoted to general practice and was called a "General Practice Number". In this number were published the results of a field survey of general practice by Dr. S. J. Hadfield, and also a review of general practice by the General Practice Review Committee of the Association. The latter was published in the supplement. Reference was made to both these documents in THE MEDICAL JOURAL OF AUSTRALIA on October 21, 1953. Medical practitioners would do well to read Hadfield's report in the *British Medical Journal* or, if they cannot do that, to read our reference to it on October 31, 1953. The essence and the future of general practice have been discussed of late in many quarters. Everything that is written overseas about general practice does not necessarily apply to Australia. A great deal of it, of course, is applicable to our conditions, and we would therefore do well to pay more than passing attention to further writings on the subject. Last October we concluded that all members of the medical profession in Australia would consent to the statement that any steps would be welcome which might safely be taken to preserve the high status of general practice in this country, to make it a more valuable instrument of service than it is, and to allow it to expand in usefulness. The present intention is to refer to three documents which have recently appeared. The first is an article published in the *British Medical Journal* of June 19, 1954, by Charles M. Fleming, Principal Medical Officer of the Department of Health for Scotland, and entitled "General Practice in America and Great Britain: Some Observations and Comparisons". The second is a report, issued by the Ministry of Health of Great Britain, of the Committee on General Practice within the National Health Service.[1] The third document is a book entitled "Good Medical Practice". It has been written by Dr. Stephen Taylor and published by the Nuffield Provincial Hospitals Trust.[2]

Since every member of the Association in Australia can read for himself the article by Fleming, we do not propose to discuss it in any great detail. One of the first things to be noted about Fleming's report, however, is the high standard of general practice which is attained in the United States. It is interesting to note that some American schools have in recent years provided, in addition to the year of internship, a three-year general practice residency, consisting of one year of internal medicine, one year of surgery, and one year of obstetrics and gynæcology. Fleming states that this places general practice on the same level with regard to length of training as most of the major specialties. Here it may be well to refer to remarks made by Professor C. G. Lambie at the recent discussion on medical education held at Sydney. Professor Lambie declared that the purpose of undergraduate medical training was to lay a foundation on which future practice might be built, whether that practice was general practice or special practice. This, of course, is not to say that no reference shall be made to general practice in undergraduate tuition. On the contrary, we shall agree that not only a future general practitioner but also a man who is to become a specialist will be all the better if he has, during his undergraduate days, gained some insight into what general practice means, how it is conducted and the nature of its objectives. Another important point made by Fleming is that, as far as he could see, more time was allowed to the practitioner in America to examine his patients than is possible on an average in Great Britain. He puts it very well when he writes: "There will always be a need to do what must be done and to leave at least some of the less necessary things undone. The art of practice . . . will consist then in doing for each patient what he or she most requires." Fleming makes some interesting comparisons between the consulting and waiting room equipment in America and that found in Great Britain, the former being much superior to the latter. This is something which each Australian practitioner will do well to investigate. Fleming finds that general practice is not losing ground in America, as is commonly supposed. He refers to a statement by Pullen, who declared that the Council on Medical Education and Hospitals of the American Medical Association found that the percentage of students planning to enter practice had increased from 36 to 47, and that the number planning to specialize had decreased from 36% to 31%. Fleming added that whatever might be said for these figures, general practitioners still constituted 47·5% of doctors registered in the United States, while specialists formed only 27·3%; the remaining 25·2% were interns, resident medical officers, government servants and so on. Readers are requested to pay particular attention to the section of Fleming's paper dealing with the scope of general practice. He thinks that if there has been a diminution in the status

[1] "Report of the Committee on General Practice within the National Health Service: Central Health Services Council"; 1954. London: Her Majesty's Stationery Office. 10" x 6", pp. 72. Price: 2s. 6d.

[2] "Good General Practice: A Report of a Survey", by Stephen Taylor, M.D., M.R.C.P.; 1954. Geoffrey Cumberlege: Oxford University Press. Melbourne: Oxford University Press. 8¼" x 5¼", pp. 628, with 56 illustrations. Price: 20s. 9d.

of the general practitioner in Britain, it is clear that what is required is a new faith in general practice by the general practitioners themselves. This is an aspect of the subject to which much more space than is available might be devoted. Fleming makes a special point of the attitude of the general practitioner to preventive medicine. The general practitioner has been told times without number that in the future his heart must be in preventive medicine, or other words to the same effect. Fleming declares with truth that the good general practitioner has been practising preventive medicine every hour of his long day from time immemorial. It is not to be wondered at that he is puzzled and perhaps a little resentful at what he is told he must do in the future. Fleming thinks that it would be more fruitful of results to tell him the truth—that the potentialities of what he has been doing in this field are only now being realized—and that attempts should be made to show him that by making full use of all community resources he could do even better than he has done.

The report of the Committee on General Practice within the National Health Service is presented with an introduction signed by Sir Henry Cohen, chairman. The terms of reference of the Committee were as follows:

> To consider and make a report on whether the existing arrangements for engaging in general practice under the National Health Service are such as to enable general medical practitioners to provide the best possible standard of service and, in particular, to advise upon: (i) the range of work and standards of practice which should be expected from the general practitioner by the public and the medical profession; (ii) types of general practice; (iii) mode of entry into general practice; (iv) non-medical help; (v) equipment and environment; (vi) method of remuneration; (vii) liaison with hospital and specialist services; (viii) liaison with local authority services.

One of the most important sections in the opening part of this report deals with the range of work of a general practitioner. The relevant clause is as follows:

> In view, however, of the great changes which have occurred in medical science and in the provision of medical services to the public, the Committee feels that it has become necessary—though it is not easy—to indicate the range of services which should normally be regarded as coming within the scope of general practice. In the Committee's view the range of work of a general practitioner should normally include: (*a*) Continuing responsibility for the health of his patients. (*b*) The diagnosis, treatment and management of such illnesses as can properly be treated in the patient's home. (*c*) When the patient's condition requires it, reference to hospitals or specialists for diagnosis or treatment or both, and at the same time the forwarding of the relevant clinical details of such patients. (*d*) Emergency treatment. This includes the emergency treatment of any patient and is not confined to those on the doctor's list. (*e*) Supervision of the convalescent period and return to work. (*f*) The practice for his patients of preventive medicine and of health education. (*g*) The giving of certificates and other administrative and legal requirements—for example, notification of disease when statutorily required.

The Committee assumes that this will be the range of work and that (*a*) proper and sufficient arrangements for the examination of patients are available, (*b*) clean and pleasant and adequately equipped accommodation is at the practitioner's disposal, and (*c*) he has association with hospitals and local health authorities. On the question of medical training and education the Committee suggests that medical students should receive more instruction than is generally given at present in the problems which confront doctors in general practice. He believes that the curriculum of some medical schools might with advantage be revised so that medical students would always be given the opportunity as a part of their undergraduate medical study of observing the scope, potentialities and responsibilities of general practice and of seeing in action what a general practice implies for the community and for themselves. This means to the Committee that a student should be given as much opportunity to study the scope of general practice as he is to learn the scope, for example, of surgery or preventive medicine. The Committee thinks that since there is inevitably an overwhelming preponderance of consultants and specialists on teaching hospital staffs, it is important that each medical school should provide opportunities for the giving of advice based on personal experience on the problems and prospects of general practice to students who may seek it. We have already insisted that some tuition on the scope, potentialities and responsibilities of general practice and of its problems should be given to all students, whether they intend to be general practitioners or specialists.

Several pages are devoted to discussion on health centres. *The National Health Service Act*, 1946, of Great Britain, made provision for the possible setting up of health centres. The number of health centres which have already been established are enumerated in an appendix to the report, and we note that only four have been established since 1948. *The Times*, in a leading article on this report, discussed the case for group practice, but added that the Committee's report probably marked the final burying of the health centre idea save for an occasional experiment in unusual circumstances. In his book on general practice, Stephen Taylor takes a poor view of the health centre. As one of the statements which he makes as the basis of his inquiry he writes that health centres have been spoken of as the only remedy and as a kind of universal panacea. At their best, he thinks, health centres are an untried solution, while for economic reasons they cannot become general for many years. *The Times* is probably correct in its statement. Another of Taylor's initial statements is that the general practitioners shall put their own house in order if they are prepared to raise their own standards so that those who are average and below average approach nearer to the best. They can do this, he thinks, only if they know what others have already succeeded in doing. If the general practitioners regard themselves only as "signposts on the way to the specialist" and conduct their practices accordingly, the case against general practice becomes a strong one.

It should, perhaps, be stated that Taylor based his conclusions on visits that he made to 30 practices. There were 81 principals and 13 assistants, of whom three were trainee assistants; there were 22 partnerships. It is interesting to read what Taylor has to say about the daily volume of work of a doctor. In his inquiry he found that the services of doctors per day varied from 24 to 87. The figure 24 applied to two woman doctors, each of whom had kept her list down to about 1200 persons. The figure for services per patient per year was 4·5. They were giving a most conscientious service in an area with comparatively little ill health. The figure of 87 was given by three men doctors. The average list of each was 3000. Their figure for services per patient per year was 8·7. They worked in an industrial area where there was a

good deal of ill health. There was no evidence of over-visiting. All three had recently suffered from "strain illnesses". At the same time they were cheerfully and efficiently carrying on with what seemed to be an intolerable burden. On the basis of his general observations Taylor thinks that fatigue, with the consequent decline in efficiency, started to show itself in the surgery after between 15 and 20 patients had been seen, the assumption being that a quarter of the patients had new illnesses. While the doctor was on a round, fatigue began to appear after 10 to 15 conscientiously conducted visits had been made. Thus the average number of services per day which can be efficiently performed by a doctor appears to Taylor to vary between 40 and 55. Taylor found that the typical industrial practice had a radius of between one-half and one mile; a typical country practice had a radius of between five and fifteen miles. It would be interesting to know what the comparable figures were for Australia. Taylor makes a sage remark when he writes that the doctors who complain most about the thoughtlessness of patients are usually the least efficient. "The good doctor trains his patients without their noticing it." He thinks that a combination of kindness and firmness is essential. Sarcasm and any attempt to make the punishment fit the crime are certain to misfire. Reproof must always be clear and explicit and must always come after treatment has been carried out and not before. Taylor has a good deal to say about group practice and rota systems. A rota system is an arrangement whereby a group of general practitioners previously working in isolation get together so that each in turn takes over the emergency duties of all, there being no financial links between the participating doctors. It is hoped that separate discussions on group practice and the rota system may be undertaken at a later date.

Current Comment.

IRON METABOLISM.

THE body of the adult man contains about three to five grammes of iron, very little of which is in the free ferric or ferrous form. Almost all the iron of the body is present in some complex form united to various proteins. One may classify these iron-containing protein complexes into two groups: (i) the proteins which contain iron as part of a hæme or porphyrin unit, and (ii) proteins containing iron not united to a porphyrin. S. Granick[1] has reviewed the properties and functions of the various kinds of iron compounds and the general metabolism of iron. Little need be said about the iron porphyrin compounds. They are concerned with the carriage and cellular utilization of oxygen in the body and include the hæmoglobins, blood and muscle, and the cytochromes and cytochrome oxidase. Oxygen is transported by red cell hæmoglobin, diffuses to muscle hæmoglobin and thence passes to cytochrome oxidase. The iron in the hæmoglobins constitutes 65% to 75% of all the iron in the body. The non-hæme iron compounds include transferrin, ferritin and hæmosiderin, as well as some others in minute amounts about which little is known.

Transferrin transports iron in the blood plasma, where it is present to the extent of some ten grammes containing about four milligrammes of iron. The protein can combine with a maximum of two ferric ions per molecule, but in the normal individual the protein is only about one-third saturated with iron. All the iron in the plasma appears to be in transferrin. Transferrin protein in excess of that which is combined with iron appears to be a safety device within limits to bind extra iron which may suddenly be put into the blood-stream. Ionized iron salts, injected parenterally, in amounts which exceed the iron required to saturate the transferrin, give rise to toxic reactions.

Ferritin is a brown iron-containing protein which is found in a high concentration especially in the liver and spleen. It can be crystallized readily and contains up to 23% of its dry weight of iron. It is the normal iron storage protein of the body, the liver being the main storage organ, but it is also present in the bone marrow and spleen and in smaller amounts in many organs. The available iron stores are estimated to be about 1·2 to 1·5 grammes. Ferritin appears to function in some way in the regulation of iron movement in the intestinal mucosa, kidney tubules and placenta.

Hæmosiderin is a granular substance containing up to 35% of iron. It is generally found in tissues rich in ferritin and is formed probably when the rate of iron deposition is too great to be handled by the ferritin mechanism. The iron in hæmosiderin can become available for blood formation, but is less readily mobilized than ferritin iron.

A 70-kilogram man contains about four to five grammes of iron. Some 65% to 75% of the body iron is in hæmoglobin, some 15% in ferritin. Iron to be absorbed from the gastro-intestinal tract must be in the ferrous form, but ferric iron is reduced to ferrous in the gut. Absorption takes place all along the intestinal tract, but mainly in the duodenal region. Iron is not available from the iron porphyrins, since these cannot be split in the gut to release iron. The regulating mechanism for iron absorption is in the intestinal mucosal cells. It is commonly stated that iron, once absorbed, does not leave the body. As a few milligrammes of iron are absorbed per day on an ordinary diet, an equivalent amount must be lost in some way to maintain equilibrium. The mucosal cells normally permit a small, relatively constant amount of iron to be absorbed daily, in general sufficient for normal body needs. Yet in hæmorrhage and pregnancy the mucosal cells permit more iron to be absorbed. In the anæmia of iron deficiency two to ten times more iron may be absorbed than in the normal. In other forms of anæmia iron absorption is also greater than normal, even when there is no iron deficiency in the body. When iron is being absorbed, the mucosal cells produce the ferritin protein, apoferritin, which combines with the iron. At any one time the total plasma iron content is about four milligrammes. In a day 27 milligrammes of iron leave the blood-stream. About 20 milligrammes of this are taken up by the marrow to form hæmoglobin. The excess is stored mainly in the liver. About 20 milligrammes of the 27 milligrammes of iron are derived from the catabolism of the red cells of the blood.

The level of the plasma iron in the blood-stream represents a dynamic equilibrium among a number of processes, including the rate of hæmoglobin breakdown and release of iron, the rate of uptake of iron by the marrow for hæmoglobin synthesis, the rate of removal and deposition of storage iron in the tissues, the rate of iron absorption from the intestinal mucosa and the rate of formation and decomposition of transferrin itself. The level of serum iron and the degree to which transferrin is saturated with iron are considered to provide a sensitive and reliable indication of iron deficiency or iron excess. Transferrin tends to become saturated with iron in conditions in which the iron content is high in the body (hæmochromatosis, transfusion hæmosiderosis) or the red blood cells are fragile (some of the anæmias) or the iron cannot be readily used by the marrow (pernicious anæmia, pyridoxine deficiency) or the liver is severely damaged. It is considerably unsaturated in hæmorrhage and iron-deficiency anæmia. In simple iron deficiency iron salts, administered preferably in the ferrous form, are usually adequate; but sometimes, when absorption is poor, the saccharated ferric oxide preparations may be given intravenously. In hæmochromatosis there is a large excess of iron in the body

[1] *Bull. New York Acad. Med.*, February, 1954.

probably due to a defect in the intestinal mucosal cells which leads them to absorb more than the usual amount of iron. Iron excess in the body may result from repeated blood transfusions. The iron from the red cells remains in the body and its accumulation leads to hæmosiderosis and eventually to cirrhosis. Excessive parenteral injection of iron will give the same results as will prolonged iron feeding over a period of years in the chronic refractory anæmias. In these cases the administration of iron is to be regarded as not only useless, but probably injurious. Iron salts should be given then only to anæmic patients who are recognized to be deficient in iron, and the amount of iron given should be not much greater than that required to replace this deficiency.

THE LOW SODIUM SYNDROME.

THE normal concentration of sodium in the blood serum varies from 133 to 152 milliequivalents per litre. This value is maintained by the neurohypophyseal and renal homœostatic mechanism and by the instinct of thirst. Any increase of body fluid tonicity stimulates both thirst and the secretion of the posterior pituitary antidiuretic hormone, and a decrease in tonicity is inhibitory to both mechanisms. Sodium forms about 91% of the total base of the serum and is therefore the main factor in determining tonicity. It is only in fairly severe salt depletion that reduced levels of serum sodium are found. The low sodium syndrome is closely related to the external depletion or internal segregation of sodium. It is also associated with retention of water, over-hydration of cells, and dilution of body electrolytes.

L. Leiter, R. E. Weston and J. Grossman[1] have discussed the origin and varieties of the low sodium syndrome. They state that the dilution phenomenon is particularly evident in association with congestive heart failure and other œdematous states. Differentiation between the effects of sodium depletion and sodium dilution in congestive heart failure becomes difficult in practice. Since replacement of lost electrolyte may be the only effective treatment, it is necessary to attempt to make the differentiation. The low sodium syndrome came into prominence with advances in the treatment of cardiac œdema, on the one hand, and with excessive non-saline hydration (occurring post-operatively) of surgical patients, on the other hand. The administration of mercurial diuretics, at close intervals, to cardiac patients receiving strict low-salt diets with a normal fluid intake furnishes the basis for the development of a low sodium syndrome. In surgical cases the common combination of removal of gastro-intestinal fluid by aspiration and the intravenous infusion of glucose solutions free from, or too low in their content of, sodium chloride often leads to a low sodium syndrome. Even the subcutaneous infusion of glucose solutions may cause marked temporary depletion of extracellular sodium, but this effect is rapidly reversible as the fluid is absorbed.

The symptoms and signs of the low sodium syndrome are derived from all the major systems of the body, particularly the cardio-vascular, gastro-intestinal and neuro-muscular systems and the kidneys. Typical symptoms include weakness, apathy, drowsiness, confusion, anorexia, nausea and vomiting, muscular cramps, faintness and signs of circulatory and renal insufficiency leading to a mixture of "medical shock" and uræmia. Thirst is usually absent when the condition is well advanced. There is constantly a decreased concentration of serum sodium, and commonly the concentrations of serum chloride and bicarbonate are proportionately reduced. Changes in serum potassium concentration may occur in either direction. Increases in levels of blood urea nitrogen, non-protein nitrogen and creatinine usually occur rapidly in the course of low sodium syndrome and in severe cases reach uræmic levels. The urine is usually sharply reduced in volume, but may be concentrated or dilute depending on the underlying disease.

The low sodium syndrome may be readily produced experimentally in quite a number of different ways. Essentially the condition is due to excess sodium loss. In both the clinical and experimental low sodium state certain things stand out—impaired water diuresis, decreased excretion of sodium in the urine, sweat, saliva and gastro-intestinal secretions, early decrease in cardiac output with little fall in blood pressure, reduction in renal blood flow and glomerular filtration rate, increased tubular reabsorption of sodium, and refractoriness to mercurial diuretics. The intimate cellular metabolic disturbances are largely unknown, but this physiological disorganization can be reproduced in the normal animal or human subject, so is not caused by disease processes. When associated with diseases such as congestive heart failure or cirrhosis of the liver it can easily lead to death.

Certain practical therapeutic problems arise in relation to the low sodium syndrome, some of which are easily handled, others only with great difficulty. It is a simple matter to correct sodium depletion in a medical or surgical case without cardiac, renal or hepatic œdema. Hypertonic salt solution, balanced as to anions if necessary, is given in an amount calculated to remedy the sodium deficiency on a total body water basis. Usually only one-third to one-half of the calculated amount is given in the first infusion; the rest is given at intervals, depending on the clinical response. The effects are generally dramatic. With the œdematous patient it is difficult to determine how much there is depletion of sodium and how much dilution. It is vital to the success of the treatment that the patient's fluid intake be sharply restricted during and for some hours after the infusion, which should be much slower than in the non-cardiac subject. Calcium and potassium may be required. In some cases one must take the risk of adding to the patient's salt load and œdema by administering at least enough hypertonic saline to raise the serum sodium level by five to ten milliequivalents per litre. If the response is good, further elevation may be effected.

[1] *Bull. New York Acad. Med.*, November, 1953.

DIAGNOSTIC TESTS FOR VIRUS DISEASES.

THE clinical laboratory has grown steadily in its ability to diagnose bacterial diseases and so resolve doubt and uncertainty in the mind of the physician. The importance of testing bacterial sensitivity to antibiotics can hardly be over-estimated both in rational treatment of the patient and in maintaining the long-term usefulness of these substances. The laboratory is slower, however, in learning to carry out diagnostic tests for virus diseases, and as a result there is much confusion of thought, and empiricism and irrational treatment are applied to the luckless patient. The idiom of the practitioner is all too frequently developed from the roseate blotting paper claims for this or that substance and its alleged activity against viruses affecting the human host.

Why should this be so? Let us examine the position. In a number of virus diseases, the infecting agent can be demonstrated from clinical material inoculated by one of several routes into the embryonated hen's egg; influenza virus, psittacosis and the rickettsial group are examples. Poliomyelitis virus can be grown in tissue culture and identified within a period of four days and allotted to one of three types. These primary diagnostic isolations call for carefully collected specimens (and time ranges for collection of them are known), as well as a considerable amount of equipment, supplies of fertile eggs, animals and personnel trained in the handling of such material. There is a bad record of many laboratory infections, and some tragedies have happened even to skilled workers. It is clear therefore that it would not be wise or economic to maintain methods of direct diagnosis in a large number of laboratories, especially as seasonal variation and epidemic prevalence might leave some of the techniques unused for periods of time. There is also the time factor concerned, in that diagnosis of acute conditions would not be achieved in time to influence treatment.

In many other diseases, indirect evidence of a particular virus can be obtained by serological means, inhibition of hæmagglutination, presence of cold agglutinins, complement fixing and neutralizing antibodies, especially if

two samples separated by fourteen days or more are available for comparison. Several of these tests are carried out with reagents, the specific antigens of which are difficult to prepare, and some of which are reagents in use every day in routine laboratories, and the general techniques in one form or another are regularly taught in the training of both pathologists and laboratory technicians.

In the *A.M.A. Archives of Pathology* for June, 1954, there is an admirable discussion by H. B. Harding, N. J. Schmidt and O. E. Hepler on the serological diagnosis of virus and rickettsial diseases, and pitfalls in the performance and interpretation of the results of the tests. This group of workers from Northwestern University Medical School have assembled a great deal of knowledge and experience, and relate the facts in respect of each type of test and the diseases for which it can be performed. It is impressive to read that no less than four of the leading manufacturing chemical firms can supply antigens suitable for the complement-fixation test in 15 diseases, and that such antigens make possible diagnosis of various types of influenza encephalitides, lymphogranuloma, typhus from various sources, herpes and variola. In Australia, we have not yet such large biological research institutes attached to the corresponding firms, though some careful control of the purity and reliability of their products may well constitute the nucleus of them. However, we do have the Commonwealth Serum Laboratories, which provide a number of diagnostic reagents, B.C.G. vaccine, insulin and other biological products, and certainly have the apparatus, plant and personnel capable of producing viral antigens. It should be possible to establish a centre in each State, where the actual testing might be carried out. In these days of air transport there is no reason why specimens of serum or blood should not arrive in satisfactory condition at a central depot, where, if necessary, a battery of tests may be performed.

The important factor which is lacking to set this machinery in action is a demand by the medical profession for such accuracy in diagnosis. Because of the time delay, practitioners tend to think that the loosely termed "influenza group" may be lumped together—the severer clinical forms also tend to be labelled "primary atypical pneumonia" because of the justification in administering the tetracycline antibiotics—and here is an outstanding instance when laboratory investigation of cold agglutinins would clarify the diagnosis. Similarly some at least of the encephalitides, admittedly a heterogeneous group, could be clearly identified, and uncertainty thus diminished.

It is the responsibility of the practising doctor to call for these diagnostic aids. If he calls loudly enough, he will be heard; if long enough, he will be answered.

SUCCINIC ACID AND MENTAL DISORDER.

VARIOUS investigators in recent years have reported an analeptic effect from the injection of high concentrations of succinate in the treatment of patients suffering from barbiturate poisoning. The question is controversial, as E. M. Trautner, E. R. Trethewie and S. Gershon pointed out in this journal last year,[1] but they were able to confirm the analeptic effect, and described their results in an extension of the use of the drug to certain types of mental disorder. More recently, Trautner, Gershon and G. E. Duerrheim have recorded further experience in the treatment of schizophrenia by combined barbiturate-succinate therapy,[2] and Gershon and Trautner have recorded their experience in the treatment of depressive psychosis with sodium succinate.[3] These reports are available to our readers, and the details presented do not need to be repeated. The findings are encouraging, but any conclusions drawn are essentially conservative and tentative. Further investigation is going on, and it is to be hoped that something of permanent value will be added to our knowledge.

The effect of succinate appears to be that it causes "a more intensive and more pleasant awareness", and this effect in conjunction with psychological and other treatment can be exploited for the patient's benefit. There is no suggestion in these papers that succinate is an epoch-making drug in the treatment of mental disorder. However, somewhat exaggerated statements have been made about it in the non-medical Press, and early this year a committee was appointed by the Cabinet of the Victorian State Government to inquire into the use of succinic acid in the treatment of patients affected with mental illness. A copy of the report of the committee has been made available by courtesy of the Department of Health of the Victorian Government, and its main points should be mentioned. The members of the committee were Sir John Newman-Morris, Professor R. Douglas Wright and Dr. E. Cunningham Dax, with Mr. John F. McCorkell as secretary. The terms of reference were:

(1) To report upon the use of succinic acid in the treatment of mental disorder.

(2) To determine whether the effects of the use of this substance noted up to date make worthwhile further investigation and research into this method of treatment.

(3) If the answer to (2) is "yes", to report upon what steps should be taken to develop the method of treatment to its maximum usefulness.

The committee examined 106 reports of cases in which succinic acid therapy had been used, all the reports coming from mental hospitals in Victoria. In 56 cases the patients had received what the committee regarded as a full course of succinic acid treatment (not less than 20 intravenous injections). These 56 cases were considered in two groups, namely, schizophrenia and depressive states. Individual patients in the schizophrenic group appeared to have benefited from the treatment, but a considerable proportion had obtained slight or no improvement. The committee agreed that there was no indication from the study of reports submitted that succinic acid provided for depressives an adjuvant or alternative form of treatment when it was compared with those at present in use in the Mental Hygiene Branch of the Department of Health; two female patients who were receiving small doses of succinic acid became so agitated or depressed that the treatment had to be stopped. The committee concluded that succinic acid generally had no harmful effects. They state in the report that it is said to provide an immediate effect of awareness and cooperation in some patients, and in this way it acts as a relaxant. Its effect on the circulation is slight, as shown by slight flushing and effect on the blood pressure. The committee did not find that the application of treatment with succinic acid had provided a remarkable advance in the treatment of mental disorder, nor was it in any sense a "wonder drug" as had been reported.

In relation to the second of their terms of reference, the committee recommended that in view of the finding that succinic acid in a few cases presenting similar diagnostic features provided a possible advantageous adjuvant to other forms of treatment, its usefulness should be further investigated. In expansion of this, in terms of the third of the terms of reference, it was recommended that further trials of treatment with succinic acid should be conducted under the general supervision of Dr. Alan Stoller as chief clinical officer of the Mental Hygiene Authority. The committee did not recommend the setting up of a costly scheme of research for succinic acid, but expressed the hope that every assistance would be afforded by the Government in the shape of staff facilities for the development of research in the Mental Hygiene Branch in the Department of Health. They commended the enterprise of Dr. Gershon and Dr. Trautner in initiating the investigation into the use of succinic acid, and also the cooperation shown by the psychiatric medical officers of the Mental Hygiene Branch of the Department of Health. The concluding terms of the committee's report, although only incidental to the main theme of the report, will not, we hope, be overlooked. It is quite important that exaggerated claims for a new form of treatment should be put back into perspective, especially in such a field as the treatment of mental disorder, but it is of much greater importance that sound research be encouraged by the provision of adequate staff and facilities.

[1] M. J. AUSTRALIA, December 5, 1953.
[2] *Ibidem*, July 31, 1954.
[3] *Ibidem*, August 21, 1954.

Abstracts from Medical Literature.

PATHOLOGY.

Adenocarcinoma Involving the Urinary Bladder.

J. D. WHEELER AND WILLIAM T. HILL (*Cancer*, January, 1954) describe seven cases of adenocarcinoma involving the urinary bladder. They state that adenocarcinoma involving the urinary bladder may be conveniently classified as (i) primary, in a normally placed or exstrophied bladder, (ii) urachal in origin, or (iii) metastatic or invasive. Primary adenocarcinoma is usually located in the base or lateral walls of the bladder. The microscopic demonstration of a transition from non-neoplastic bladder epithelium to adenocarcinoma and the coexistence of *cystitis cystica* and *cystitis glandularis* confirm the presence of a primary neoplasm. Adenocarcinoma of urachal origin involves the dome of the bladder. The muscularis is almost invariably involved to a greater extent than the submucosa. The mucosa may be intact or ulcerated. *Cystitis cystica* and *cystitis glandularis* are usually absent and, if present, are incidental lesions. Urachal adenocarcinoma often presents a palpable suprapubic mass. The authors regard adenocarcinoma involving the dome of the bladder as a separate clinical entity and believe that the vast majority of cases are of urachal origin. For this reason an attempt to treat an adenocarcinoma in this location by any means short of segmental resection is doomed to failure in most instances. The authors believe that the cell of origin of a primary adenocarcinoma of the bladder is a columnar mucin-secreting cell derived from the bladder epithelium through a process of metaplasia. The probable sequence of events is from Brunn's nests through *cystitis cystica* and *cystitis glandularis* to adenocarcinoma. The general incidence of *cystitis cystica* and *cystitis glandularis* is unknown, nor is it known in what percentage of the cases adenocarcinoma will supervene; however, the incidence of the latter complication must be quite low. The English literature on adenocarcinoma involving the urinary bladder is reviewed.

Glomus Tumour.

E. S. J. KING (*Australian & New Zealand J. Surg.*, May, 1954) presents a review of glomus tumours based on a study of the literature and investigation of 23 new cases. He states that although distributed mainly in the dermis and subcutaneous tissues, these tumours occur also in muscle, tendon and bone and in the deeper parts of the body; and though they are usually found singly, they may also be multiple. They occur more commonly in males. These tumours are not neoplasms, but are malformations (hamartomata) of a characteristic structure, being composed of a network of vessels in all of which there are characteristic "epithelioid" or "glomus" cells. Smooth muscle, fibrous tissue and nervous tissue may occur in considerable amounts and occasionally may predominate. The tumours thus are seen to merge imperceptibly through various examples into vascular or muscle tumours of the skin and subcutaneous tissues. This may be correlated with the observation that some of these other types of tumour may show the characteristic clinical syndrome of severe pain of either local or radiating type. Although this observation is important as indicating the lack of sharp boundaries so characteristic of many pathological conditions and, in fact, of life, the typical tumour is a very characteristic structure.

Microscopic Structure of Gastric Carcinomata and Their Regional Lymph Nodes in Relation to Survival.

MAURICE M. BLACK, STANLEY R. OPLER AND FRANCIS D. SPEER (*Surg., Gynec. & Obst.*, June, 1954) compare the gross and microscopic features of two series of cases of gastric carcinoma. In one series the 66 patients were known to have died within three years after operation. In the other the 55 patients had survived for five years or longer after operation. The data obtained indicated that longer survival in cases of gastric carcinoma was associated with the presence of a lymphocytic reaction in the stroma of the primary tumour and/or sinus histiocytosis of the regional lymph nodes. These features were more critically related to survival than the age or sex of the patient, the pre-operative delay, the gross or microscopic growth pattern of the tumour, or the presence or absence of regional lymph node metastases at the time of surgery.

Fœtal and Neo-Natal Hepatitis and Its Sequelæ.

J. HENRY DIBLE, W. E. HUNT, V. W. PUGH, L. STEINGOLD AND J. H. F. WOOD (*J. Path. & Bact.*, January, 1954) set out to bring to notice certain cases of severe liver disease in the newborn which can be shown not to be due to blood incompatibility, syphilis or congenital obliteration of the bile ducts. They state that the infants may die within one or two days of birth, and hence no question of post-natal malnutrition arises. The lesions found in the liver are characteristic, and of a degree of development so advanced as to make it certain that they were present *in utero*. From the histological appearance of the lesions, which is essentially the same in all, the authors consider them to be examples of intra-uterine hepatitis, and state that if this is the true interpretation, the question arises, as in adult hepatitis, of a virus origin. In some of the cases siblings have been affected. There are reasons for believing that this disease may be the cause of certain cases of juvenile cirrhosis and in particular of those in which a familial element is present.

The Role of Intimal Hæmorrhage in Coronary Occlusion.

R. A. B. DRURY (*J. Path. & Bact.*, January, 1954) has systematically studied the coronary arteries of 55 subjects who died with occlusive coronary artery disease. Intimal hæmorrhage was found in 37 of the 58 occluded arteries. It was the most common single complication of coronary artery atheroma, and in almost all cases occurred in foci of necrotic atheromatous softening. Seldom of capillary origin, it usually resulted from rupture or permeability of the endothelium due to atheromatous necrosis. Even when a massive intimal hæmatoma resulted from the replacement of the contents of a large atheromatous plaque by blood from the lumen of the artery through an intimal rupture, the degree of occlusion was not greatly increased. Such hæmorrhages did not appear to be the cause of sudden coronary artery obstruction. Repeated small intimal hæmorrhages from capillaries indicated recent atheromatous softening and might have accelerated atheromatous necrosis and its complications. The author states that coronary thrombosis usually results from necrosis or rupture of the endothelium overlying an atheromatous plaque. Hæmorrhage into the plaque results from instability of the atheroma, but thrombosis and hæmorrhage are independent complications of coronary artery atheroma. Coronary artery atheroma and thrombosis are the main factors in coronary occlusion; intimal hæmorrhage is a common incident of minor importance which does not contraindicate the use of anti-coagulants in the treatment of coronary occlusion.

The Pathogenesis of Simple Pneumonokoniosis in Coal Workers.

A. G. HEPPLESTON (*J. Path. & Bact.*, January, 1954) has studied the mode of formation of dust foci and the changes which the pulmonary elastica and smooth muscle undergo in consequence of dust aggregation. His object was to elucidate the mechanism by which focal emphysema develops in coal workers. He states that the respiratory bronchioles are closely invested by broad cylinders of dust cells enmeshed by fibrous tissue which consolidate the preexisting vesicular tissue. The force of inspiration normally required to expand this consolidated zone is transmitted to the respiratory bronchioles, so that these structures are subjected to a slightly increased inspiratory traction. In many cases the aggregation of dust is associated with atrophy of the bronchiolar smooth muscle. The normal expiratory shortening and constriction of the respiratory bronchioles do not therefore occur. The result of these mechanical disturbances is dilatation of the respiratory bronchioles—that is, the development of focal emphysema. When smooth muscle is present in normal amount, focal emphysema is usually absent. Damage to the pulmonary elastica is not a major factor in the genesis of focal emphysema. Dilatation of the respiratory bronchioles is not associated with the simple silicotic nodule, because of the excessive fibrosis which constricts them, and, as the lesion grows, tends to counteract the increase of inspiratory traction imposed on the bronchioles as a result of the surrounding vesicular consolidation.

The Pathogenesis of Diphtheria.

C. R. AMIES (*J. Path. & Bact.*, January, 1954) uses the term diphtheria exotoxin in a biological sense without prejudice to the question whether it is a single antigenic substance or a complex. He states that this specific exotoxin is the only demonstrable pathogenic substance produced by *Corynebacterium diphtheriæ*. The so-called diphtheria virulence test is solely a method of determining whether a strain of *C. diphtheriæ* is capable of forming significant quantities of the specific exotoxin. It should properly be

called the "toxigenicity test". The biological function of the exotoxin is to inhibit the inflammatory reaction of the tissues, thus enabling the bacteria to become established. The remote effects of the exotoxin upon the heart, adrenals and nervous system are purely incidental. In non-immune individuals the course and outcome of the infection are determined by the effectiveness of the local inflammatory response. If the initial response is inadequate, the bacteria proliferate rapidly, and the toxin produced soon overwhelms the defence mechanisms of the host; the myocardial and other vital tissues are quickly affected, and death soon follows. If, on the contrary, an effective inflammatory response occurs, the bacteria are destroyed before they have time to produce much toxin, and the infection is quickly brought under control. When this happens, the disease is self-terminating and is followed in due course by some measure of antitoxic immunity. Antitoxin, if administered sufficiently early, combines *in situ* with toxin and thus gives the tissues time to build up an effective inflammatory response; the bacteria are then destroyed by phagocytosis. Possibly the antitoxin also has a direct protective action on the myocardial cells. Late administration is useless, because the toxin has already become fixed to the susceptible cells. The frequent association of *gravis* and *intermedius* types of *C. diphtheriæ* with the more severe forms of the disease is attributed to the fact that these types produce toxin more rapidly than do the *mitis* types and therefore have a greater inhibitory effect upon the immediate cellular response of the host.

MORPHOLOGY.

Rotary Movements of the Upper Limb.

N. SALTER AND H. D. DARCUS (*J. Anat.*, October, 1953) describe an investigation of the amplitude of forearm rotation and humeral rotation with the elbow extended. Forearm rotation with the elbow flexed was consistently larger than with the elbow extended. In the majority of instances the difference exceeded 15%. This finding may be explained by alteration in distances between the origin and insertion of muscles participating in the movement in the two positions of the elbow. No consistent effect was found of elbow position on humeral rotation. In general, in the flexed position of the elbow, humeral rotation was larger, but in the majority of instances the difference was less than 10%. Humeral rotation in general contributed more to total rotation with the elbow extended than did forearm rotation. The average was 54%, with 90% of the values falling between 48% and 61%. No effect of age on the amplitude was found in the groups studied, the average ages in which were 19·5 and 31·0 years. The average amplitudes recorded from the female subjects were in all cases greater than in the males of a similar age group, but these were statistically significant only in total rotation and humeral rotation with the elbow extended. The amplitudes on the right and left sides tended to be of the same order, although statistically significant differences were found. For practical purposes it is concluded that, in spite of these differences, the amplitude recorded from one limb is the most reliable standard of normality or otherwise of the amplitude of the corresponding movement on the other side.

The Piltdown Fraud.

J. S. WEINER AND K. P. OAKLEY (*Am. J. Phys. Anthropol.*, March, 1954) found that, as a result of the application of the "fluorine test", the Piltdown cranium might be Upper Pleistocene, while the mandible and canine tooth were modern. Further, they submit evidence that the composition of the mandible and canine also leaves no doubt that they are modern, and the evidence of the staining and also of artificial abrasion shows that they are not only modern but fraudulent.

Appearance of Ossification Centres and the Fusion of Bones.

C. R. NOBACK (*Am. J. Phys. Anthropol.*, March, 1954) states that the voluminous literature, citing and presenting data on the subject of the times of appearance of ossification centres and times of fusion of bones, gives the definite impression that a wealth of accurate information exists; but this conclusion is deceptive, as original data that are critically documented and accurately defined are scant. The data on the times of appearance of the primary ossification centres (most appear in the first half of pre-natal life) are insufficient to give more than a general outline of the times when these bones appear. Some statistical data are recorded on the times of appearance of the carpal and tarsal bones and the epiphyseal centres of the extremities. Much of the literature is inadequately defined. The epiphyses of the girdles, ribs and vertebral column appear during and after puberty. The fusion of bones is most active during the second and third decades. Statistical analyses of the times of apearance of these bones and the union of any two bones cannot be made at the present time because accurately documented data are too scarce. Although technical difficulties exist in the obtaining of information, accurate data on a limited number of bones would be valuable.

The Levatores Costarum and Their Nerve Supply.

A. B. MORRISON (*J. Anat.*, January, 1954) finds that the *levatores costarum* are supplied by the lateral divisions of the posterior primary rami of the corresponding spinal nerves and not by the intercostal nerves as is currently accepted. It is suggested that the *levatores costarum* muscles correspond to the lateral portion of the proper posterior intertransverse muscles of the cervical region.

Anatomy of Hare-Lip.

T. S. KING (*J. Anat.*, January, 1954) describes from sectioned and dissected human material the anatomical structure in bilateral hare-lip with cleft palate. The premaxillæ had shallow sockets for the incisor teeth. Subvomerine processes were present, but no palatal or facial processes. The arterial supply of the median tubercle was derived from the left facial artery by an arching trunk which crossed the nasal bone to reach the mid-line and then traversed the *columna naris* and philtrum. The veins had similar arches, but emptied into the anterior facial veins on both sides. Large trunks of the infraorbital nerves passed down with the arterial trunks to the median tubercle. The incisor teeth had a copious blood supply from the facial arch, but no nerve supply. The anterior superior dental nerves of each side, after traversing the maxillæ, joined the infraorbital trunks. The normal development of the philtral portion of the upper lip and of the premaxillary region is discussed in the light of the findings in hare-lip material. In abnormal conditions nerves may wander far from their normal courses, and the distribution of sensory nerves cannot be used safely for the determination of embryonic sources of adult tissues.

The Plantar Aponeurosis and the Arch of the Foot.

J. H. HICKS (*J. Anat.*, January, 1954) states that the plantar aponeurosis at its distal end is attached through the plantar pads of the metatarsophalangeal joints to the proximal phalanges. The attachment is mechanically very strong. When the toes are extended they pull the plantar pads and hence the aponeurosis forward around the heads of the metatarsals, like a cable being wound onto a windlass. The arch is caused to rise because the distance between the metatarsal heads and the calcaneum is thereby shortened. The toes are forced into an extended position in toe-standing and walking by the action of body weight, and the arch is caused to rise by this ligamentous mechanism without the direct action of any muscle.

Choroidal Circulation of Eye in Man.

K. C. WYBAR (*J. Anat.*, January, 1954) describes particularly the equatorial anastomoses between the anterior and posterior arterial group, with the distribution of the choroidal arteries in relation to the important question of segmental blood supply, with the formation of the main venous channels and with the zonal peculiarities of the chorio-capillaris. The meeting place of the posterior choroidal circulation (short posterior ciliary arteries) and anterior choroidal circulation (recurrent branches from the major arterial circle of the iris, long posterior ciliary artery and anterior ciliary artery) may be marked by an intervening capillary network, but many of the vessels in the anastomosing circulations are in direct continuity with one another. The short posterior ciliary arteries are segmentally arranged, and each branch supplies a localized zone of the choroid with an arteriolar-capillary network, but there is no anatomical evidence for the conception that the short posterior ciliary arteries are true end-arteries. No arterio-venous anastomoses have been found in any part of the choroid, although these have been postulated by other workers. The size and density of the vessels in the chorio-capillaris vary in different regions of the choroid according to their distance from the optic disk, but there is no evidence for the view that the chorio-capillaris underlying the macula has distinctive anatomical features.

British Medical Association News.

ANNUAL MEETING.

THE annual meeting of the South Australian Branch of the British Medical Association was held in the Verco Theatre, Institute of Medical and Veterinary Science, Adelaide, on June 23, 1954, DR. SHOLTO J. DOUGLAS, the President, in the chair.

ANNUAL REPORT OF THE COUNCIL.

The annual report of the Council was received and adopted on the motion of Dr. R. Thorold Grant, seconded by Dr. R. F. Matters. The annual report is as follows.

At the annual general meeting of members of the Branch held on June 24, 1953, the following officers and members of Council were elected.

President: Dr. Sholto Douglas.

Vice-President: Dr. Ivan B. Jose.

Honorary Treasurer: Dr. F. L. Wall.

Honorary Medical Secretary: Dr. R. C. Angove was reappointed by Council at a meeting held on July 2, 1953.

Ordinary Members of Council: Group A—Dr. O. W. Bowering, Dr. A. S. de B. Cocks and Dr. D. G. McKay; Group B—Dr. J. R. Coates.

At the first Council meeting in the new year, held on July 2, 1953, the following subcommittees were appointed:

Scientific: Dr. McKay and Dr. Symons.

National Health Service: Dr. Bowering, Dr. Mallen, Dr. Prest and Dr. Rieger.

Ethics: Dr. Cherry, Dr. Cocks, Dr. Hanson, Dr. Jose, Dr. Rieger and Dr. Wall.

Parliamentary Bills: Dr. Mallen and Dr. Rieger.

Publicity: Dr. Mallen and Dr. Symons.

Library: Dr. Cocks, Dr. Cherry and Dr. Dwyer.

Salaries: Dr. Mallen, Dr. Prest and Dr. Rieger.

Editorial Committee (Handbook): Dr. Gartrell, Dr. Mallen and Dr. Rieger.

Medico-Pharmaceutical Liaison Committee: Dr. Angove, Dr. Bowering and Dr. Rieger.

Tuberculosis Standing Committee: Dr. Cowan, Dr. Hayward, Dr. Hetzel, Dr. Sutherland, Dr. Sleeman and Dr. Woodruff.

The President, Immediate Past President (if any), the Vice-President or Vice-Presidents, the Honorary Treasurer and the Honorary Medical Secretary are ex-officio members of all committees other than the Ethics and Standing Committees.

The President and Honorary Medical Secretary are ex-officio members of the Ethics Committee and of all standing committees.

Dr. W. M. Irwin attended 11 meetings of the Council as the Local Representative of THE MEDICAL JOURNAL OF AUSTRALIA.

Dr. J. M. Dwyer attended two meetings of the Library Committee held on September 1, 1953, and March 2, 1954, respectively.

A special subcommittee, consisting of Dr. H. K. Fry (chairman), Dr. C. C. Jungfer, Dr. J. E. McCartney and Dr. J. H. Nicholls, met on two occasions to consider health matters in the south-east which arose from a letter received from the honorary secretary of the South-Eastern Medical Association on October 24, 1953.

Monthly Scientific Meetings.

Eight scientific meetings have been held up to June 17, the following programme being carried out:

1953.—July 30: Paper by Dr. Clifford Jungfer entitled "Child Health in a Rural Community". Discussion opened by Dr. D. G. McKay. September 24: Clinical evening held at Repatriation General Hospital, Springbank. October 29: Paper by Dr. J. A. R. Miles entitled "Benign Lymphocytic Meningitis". Discussion opened by Dr. J. V. Gordon. November 11: Clinical evening at Adelaide Children's Hospital.

1954.—February 25: Paper by Professor Catcheside, of the Waite Institute, entitled "Evolution in Human Communities". Discussion opened by Dr. Guy Lendon. March 25: Paper by Mr. Alan Lendon on the subject of "Recent Views on Surgical Education". Discussion opened by Mr. J. R. Magarey. April 29: Listerian Oration delivered by Professor H. N. Robson entitled "Hæmostasis".

In addition to the above meetings, members were also invited to attend a lecture given by Sir Charles Symonds, which was sponsored by The Royal Australasian College of Physicians, held on October 8, 1953, and by the State Committee of the Royal Australasian College of Surgeons to attend the Anstey Giles Lecture given by Mr. Russell Howard which was held on May 21, 1954.

Membership.

The membership of the Branch is now 785 and the number of student associate members 44. It is with regret that the deaths of the following members are recorded: Dr. C. B. Crosbie, Dr. F. J. Newall, Dr. A. H. E. Watson, Dr. A. C. Wilton and Sir Edmund Britten Jones.

Representation.

Medical Board of South Australia: Dr. C. O. F. Rieger.

Dental Board of South Australia: Dr. W. John Close.

Flying Doctor Service of Australia (South Australian Section): Dr. J. M. Dwyer.

Federal Council of the British Medical Association in Australia: Dr. L. R. Mallen and Dr. C. O. F. Rieger.

Federal Medical War Relief Fund (Local Committee of Management for South Australia): Sir Henry Newland, Sir Brian Swift and Dr. E. F. West.

St. John Ambulance Association: Dr. H. H. Hurst.

Local Representative of "The Medical Journal of Australia": Dr. W. M. Irwin.

British Medical Hall Company, Limited: Dr. C. O. F. Rieger and Dr. F. L. Wall.

Mothers and Babies' Health Association: Dr. R. N. C. Bickford.

ATTENDANCES AT COUNCIL AND COMMITTEE MEETINGS.

	Council.	Scientific.	National Health Service.	Ethics.	Editorial.	Library.
ANGOVE, R. C.	11	1	1	1	1	—
BOWERING, O. W.	10	—	3	—	—	—
CHERRY, E. P.	11	—	—	1	—	1
COATES, J. R.	12	—	—	—	—	—
COCKS, A. S. DE B.	12	—	—	1	—	2
DOUGLAS, S. J.	12	1	3	1	2	—
HANSON, B. S.	9	1	2	1	1	—
JOSE, I. B.	10	1	3	—	2	—
MALLEN, L. R.	10	—	2	—	—	—
MCKAY, D. G.	10	1	—	—	—	—
NICHOLLS, J. H.	12	—	—	—	—	—
PREST, H. G.	9	—	2	—	—	—
RIEGER, C. O. F.	12	—	3	1	2	—
SYMONS, E. L.	11	1	—	—	—	—
WALL, F. L.	11	1	3	1	2	—
Meetings held up to June 3, 1954	12	1	3	1	2	2

Advisory Council on Health and Medical Services: Dr. L. R. Mallen.

Nurses' Board of South Australia: Dr. G. H. Burnell.

University Post-Graduate Committee in Medicine: Dr. L. R. Mallen, Dr. R. C. Angove and the President *ex officio*.

Central Council of the Association, London: Dr. Myles Formby.

Chiropody Board of South Australia: Dr. Neville P. Wilson.

Florence Nightingale Memorial Committee: Dr. Mary Burnell and Dr. Barbara Russell.

Australasian Medical Publishing Company, Limited: Sir Henry Newland, Dr. L. R. Mallen and Dr. C. O. F. Rieger.

World Medical Association: Dr. L. R. Mallen.

Representatives to Annual Meeting of the Association (Glasgow, July, 1954): Dr. C. Duguid, Dr. A. D. Lamphee and Dr. A. R. Southwood.

Sections for Special Branches of Medical Knowledge.

Section of Anæsthetics.

Report for 1953-1954.—The membership is now 23. Meetings were held at approximately two-monthly intervals, with Dr. Winifred Wall as chairwoman. 1953: June, Dr. Gilbert Brown talked on reminiscences of his early days in Liverpool; August, Dr. John Barker and Dr. John Stace gave papers on premedication; October, Dr. T. A. R. Dinning gave a paper on "Anæsthesia in Neurosurgery"; November, the Christmas meeting was addressed by Miss Audrey Simpson and Miss Jennings on physiotherapy in pre-operative and post-operative care of patients for thoracic surgery. 1954: February, at the annual general meeting, Dr. John Barker was elected Chairman for the ensuing year, Dr. John Stace, Vice-Chairman, and Dr. Howard Ellis, Secretary-Treasurer; April, Dr. Charles Helman presented a paper on relaxing agents in electroconvulsive therapy. Five members went to Perth for the annual general meeting of the Australian Society of Anæsthetists at the end of April.

Section of Clinical Medicine.

Annual Report for the Year 1953-1954.—Membership: There are 58 members on the roll, of whom 42 were financial for the year, an increase of eleven over last year. Officers: At the annual general meeting held on May 12, 1953, the following officers were elected: Chairman, Dr. R. G. de Crespigny; Honorary Secretary and Treasurer, Dr. R. A. Burston; Committee, Dr. J. M. McPhie, Dr. R. A. A. Pellew, Dr. C. T. Piper. Clinical meetings: Meetings were held in the Physiotherapy Department of the Royal Adelaide Hospital on the second Tuesday of May, August and November, 1953, and February, 1954, the average attendance being 30 members. Meetings were arranged as on previous occasions, and the method of presentation of patients appears to be running smoothly. One meeting took the form of a discussion on mitral valvotomy. British Medical Association Clinical Prize: The prize for 1953 was won by Mr. S. Posen. The question of the future value of the prize was left to the committee for further discussion.

Ear, Nose and Throat Section.

The annual general meeting was held on Tuesday, March 10, 1953. The annual report and the financial statement were presented to the meeting and adopted. Five cases were shown and discussed. In view of the fact that the estimated expenditure for the ensuing year would exceed the maximum possible income at the current rate of subscription it was decided to raise the annual subscription to £1. The following officers were elected: Chairman, Dr. R. M. Glynn; Vice-Chairman, Dr. R. H. von der Borch; Committeeman, Dr. A. S. de B. Cocks; Secretary and Treasurer, Dr. R. N. Reilly; Auditor, Mr. F. C. W. Dobbie. Four ordinary general meetings were held throughout the year.

On May 26 the meeting took the form of a film evening at the Verco Theatre, when films dealing with plastic repair of the nose, œsophageal voice and sinus thrombosis were shown. The films were made available by Dr. Frank Shanasy, of Melbourne, the United States Information Services, and Belclere, Limited. The meeting was adjourned to Dr. Glynn's rooms on May 30, when the evidence to be given before the Government committee on deaf education was discussed.

On July 21 Dr. P. G. Jay presented a comprehensive paper on recurrent middle ear infections in children. The discussion, in which all members took part, was opened by Dr. Pearlman. Two cases were shown.

The meeting held on August 27 was devoted to a very full discussion of the Commonwealth Medical Benefits Scheme and to the matter of fees in general. A number of resolutions covering contentious matters were agreed to and, in due course, forwarded to the Council of the Branch to be submitted to the Federal Council for appropriate action with the Government.

The final meeting of the year was held on December 1 at the Berkeley Hotel and took the form of a complimentary dinner to Dr. Douglas Guthrie, Lecturer in the History of Medicine, University of Edinburgh, and a former contributor to and the present editor of "Logan Turner's Text Book of Diseases of the Ear, Nose and Throat". After dinner, Dr. Guthrie addressed the members and discussed some points in the history of otolaryngology, recent advances in treatment of diseases of the ear, nose and throat, and finally recounted the history of Logan Turner's text-book.

Membership: Out of a total of twelve members the average attendance at meetings was nine.

Medico-political: During the year the South Australian Government appointed a committee to inquire into and report on the present position of and possible future changes in the education, training and assistance of the deaf and hard of hearing in this State. The committee consisted of Mr. J. G. Cannon, a Victorian educationist, as chairman, Dr. R. N. Reilly and Mr. P. F. Polinitz, of the Auditor-General's Department, with Mr. John White, of the Attorney-General's Department, as secretary. Dr. R. M. Glynn and Dr. S. Pearlman gave evidence before the committee on behalf of the Section. The committee's report was presented to the Government early in November.

Section of Ophthalmology.

The annual report for 1953 states:

Ten meetings were held during the year March, 1953, to February, 1954. Membership was 14.

The annual general meeting was held on March 10, 1953, when clinical cases were shown and the following officers were elected: Chairman, Dr. S. Pearlman; Vice-Chairman, Dr. F. J. B. Miller; Honorary Secretary and Treasurer, Dr. M. C. Moore; Committeeman, Dr. D. W. Brummitt; Auditor, Mr. F. C. W. Dobbie.

On May 5 and June 29 meetings were held at which cases were presented and arrangements were made for the Ophthalmological Society of Australia conference to be held in Adelaide in October, 1953.

On August 3 the Commonwealth Medical Benefits Scheme was discussed. At this meeting a standardized form of pre-operative treatment and preparation of instruments for ophthalmic operations was adopted for use in public and private hospitals.

The Commonwealth Medical Benefits Scheme and the Ophthalmological Society of Australia conference were further discussed at meetings held on August 14 and 24 and September 7 and 22.

A clinical meeting was held on November 10, and on February 9, 1954, a general meeting received the Honorary Secretary's and Treasurer's report on the Ophthalmological Society of Australia conference.

As will be seen from the above report, at this year's meetings a considerable time was spent in discussion of the Commonwealth Medical Benefits Scheme and in making arrangements for the Ophthalmological Society of Australia conference. This conference was held in Adelaide in October and was considered a most successful meeting by both interstate and local members. Papers were read by two overseas guests, Professor Weve, of Utrecht, and Mr. Seymour Philps, of London, in addition to those of Australian oculists.

Affiliated Local Associations of Members.

Northern Medical Association.

Annual Report for Year Ended June 30, 1954.—Four meetings were held during the year as usual.

The first was at Jamestown on August 2, 1953, when Dr. M. Chinner spoke on liver diseases. Twelve members were present.

The second meeting was held at Tanunda on November 8, 1953, when two films were screened by courtesy of the Anti-Cancer Committee, the first on cancer of the cervix and uterus, and the second on cancer of the breast. Dr. Burnard gave comments and answered questions. Twelve members were present.

The third meeting was held at Clare as a post-graduate meeting on January 21, 1954, when nineteen members attended. The lectures were: Professor Robson, "Hypertension and Antibiotics"; Dr. K. B. Winter, "Common Psychiatry Problems"; Dr. J. E. McCartney, "Laboratory Aids and How to Use Them"; Dr. J. Estcourt Hughes, "Hæmorrhoids".

The death of Dr. C. B. Crosbie, of Brinkworth, on March 6, 1954, was recorded with regret, and a letter of condolence was sent by the President.

The fourth meeting was held at Port Pirie on May 9, 1954, and was a clinical meeting where cases were shown by Dr. K. R. Burdon (an unusual case of head injury), Dr. R. D. Hammill (spontaneous pneumothorax, two cases), Dr. V. W. Potter (a cardiac lesion associated with pregnancy), Dr. F. D. Rowe (electrocardiogram) and Dr. G. Viner Smith (ulcerative colitis).

Then followed the general meeting, when the following officers were elected for 1954-1955: President, Dr. K. R. Burdon; Vice-President, Dr. V. W. Potter; Honorary Secretary, Dr. C. C. Dewar; Committee, Dr. F. D. Rowe and Dr. S. Ian Pugh; Auditor, Dr. K. J. Basedow. The Past President is Dr. G. Wien Smith.

Twelve members attended the above meeting, and the average attendance at all meetings was fourteen.

South-Eastern Medical Association.

Annual Report of the South-Eastern Medical Association for Year Ended April 10, 1954.—Four meetings were held during the year.

On July 18, 1953, at Millicent, a clinical meeting was followed by dinner, after which Dr. C. H. Schafer gave an address on "Common Skin Disorders and Their Treatment".

On October 17, 1953, at Mount Gambier, a clinical meeting was held, followed by dinner. In the evening Dr. Mary Burnell gave an address on "Recent Advances in Anæsthesia".

On January 16, at Naracoorte, a clinical meeting was held, followed by dinner, after which Professor Robson gave an address on "The Causes and Treatment of Anæmias".

On April 10, 1954, at Mount Gambier, at the annual general meeting, a clinical meeting was held, followed by dinner, after which Dr. Sholto Douglas gave an address on "Medico-Political Matters".

There are 23 financial members of the Association, and the average attendance at the meetings has been sixteen.

Upper Murray Medical Association.

Three ordinary and three post-graduate week-ends were held between June 30, 1953, and June 30, 1954.

A general meeting of the Association was held at Barmera on July 11, 1953, and discussion centred around the new Commonwealth Government Health Service and suggestions for future meetings. Two talks were given, namely, by Dr. Tarlton Rayment on relaxation by suggestion, with particular reference to obstetrics, and by Dr. G. A. Hunter on arteriosclerotic heart disease.

A post-graduate week-end meeting was preceded by a dinner at the Berri Hotel for visitors and members on September 15. Dr. D. G. McKay discussed congenital and neonatal problems. Dr. L. Bonnin deal with orthopædic problems of the neck and shoulder. Dr. J. E. McCartney explained and demonstrated facilities that the I.M.V.S. could provide for the assistance of practitioners. The final period was devoted to the popular and valuable "questions and answers".

On Saturday, November 8, a film evening was held at the Glossop High School by courtesy of the Anti-Cancer Campaign Committee. Films were presented by Dr. R. de G. Burnard illustrating carcinoma of the breast, carcinoma of the cervix and uterus, and carcinoma of the rectum.

The annual general meeting was convened at Renmark on January 16, 1954, when the following officers for the ensuing year were elected: President, Dr. W. J. Sleeman; Vice-President, Dr. R. T. Auricht; Secretary and Treasurer, Dr. R. L. Miller. Discussion took place on the Pensioners' Medical Scheme and the next week-end course.

Visiting speakers to Loxton on March 13 and 14 for the next post-graduate meeting were Dr. F. H. Beare, who spoke on psychiatric cases met in general practice, Dr. C. T. Piper, who related many of his experiences of allergic conditions and their treatment, and Dr. J. R. Magarey, who discussed many of the commoner abdominal surgical diseases.

A further week-end course will be held at Barmera on June 12 and 13. The programme is as follows: Saturday: Dinner for lecturers and members. Dr. M. T. Cockburn, "Management of the Premature Infant"; Dr. A. C. McEachern, "Pre-Operative Preparations and Post-Operative Complications". Sunday: Dr. A. S. de B. Cocks, "Common Diseases of the Ear". Quiz session.

There are twelve members of the Association.

Loyal Address.

During the recent Royal visit the Branch Council took the opportunity of presenting a loyal address to Her Majesty the Queen. The acknowledgement received from Her Majesty's private secretary reads as follows: "I am commanded by the Queen to ask you to convey to the members of the South Australian Branch of the British Medical Association Her Majesty's sincere thanks for the kind and loyal message you have sent. The Queen greatly appreciated this expression of your good wishes on the occasion of Her Majesty's visit."

It is regretted that as this address, beautifully prepared and illuminated, was received only a few days before presentation, it was impossible to exhibit it to members.

Pensioner Medical Service.

With the proclamation of the remaining Section 329 of the *National Health Act* by the Minister for Health in April last, it became necessary to reappoint the Medical Services Committees of Inquiry which previously functioned under the *National Health Service Act*, 1948-1949. The committee in this State comprises the Deputy Director of Health and four medical practitioners appointed by the Minister from among six medical practitioners nominated by the Council of the British Medical Association in the State concerned.

The decision of this committee on any case should therefore be reliable. Clause 34 of the *National Health Act* is quoted:

> If a Committee of Inquiry established under Division 2 of Part VIII of this Act reports that, in its opinion in the circumstances of a particular case, a medical practitioner should not be paid in respect of medical services specified in the report or should be paid in respect of services so specified an amount or a rate less than the amount or rate of fees or allowances, prescribed by the regulations or fixed by or under an arrangement or agreement referred to in paragraph (*b*) of subsection (2) of section 31 of this Act, the Minister may, in accordance with that report, disallow, in whole or in part, a claim by that medical practitioner in respect of those services.

The average cost in payment to doctors per pensioner *per annum* in South Australia is the highest in Australia. Allowing for the possible effects of local influences, this means that, in some cases, there may be over-attendance. Honest interpretation of the word "attendance" and the avoidance of rendering vouchers for such services as would not have been charged for were the patient not in the Pensioner Medical Service are ethical essentials. As in private practice doctors make allowances and reductions for frequent attendances over a long period, so should we in like circumstances also prune our pensioner claims. It is grossly wrong to be prompted to charge for every trivial attendance merely because the Government pays the bill. The usual alternative methods of obtaining help in treatment should be employed in chronic cases, for example, for routine injections.

The ethical demand of this memorandum is that the few to whom it applies should immediately fall into line with the many to whom it is not applicable.

The State Council has been exercised by the expected increase in volume of Pensioner Medical Service work which would follow any liberalization of the means test. After deliberation it recommended to the Federal Council that the Government should be requested to consider absorbing the whole Pensioner Medical Scheme into the general scheme for benefits, should the number of persons rise sharply from liberalization of the means test or from other considerations.

Pharmaceutical Benefits Act.

At the last Federal Council Meeting held in Melbourne from March 15 to 17, 1954, a list of drugs considered necessary for emergency use was drawn up and later submitted to the Minister for Health, so as to legalize the method of supply of these drugs. Further advice from the Minister for Health in this connexion is awaited. Meanwhile, it is

important to remember that all prescriptions for pharmaceutical benefits and pensioner pharmaceutical benefits must now be written in the medical practitioner's handwriting.

National Health Service.

With the passing of the consolidated *National Health Act* and the proclamation of the remaining sections (that is, Parts III and IV) of the *National Health Act*, 1953, on April 14, 1954, this important and far-reaching measure became established on a firm foundation. The only obligation imposed on medical practitioners is that they shall give such information (that is, date, name of patient, service, fee) on their account form or receipt as will enable the voluntary organization of which the contributor is a member to promptly assess the amount of refund due.

On behalf of the profession in Australia, the Federal Council has offered its full cooperation in the scheme, and it is in the interests of all practitioners that they do their utmost to ensure that the measure functions as smoothly as possible. Whilst the scheme may have certain imperfections, there is no doubt that a very sincere attempt has been made by the Government to give a large measure of financial relief regarding doctors' bills to all sections of the community, and existing anomalies will be rectified in the light of further experience.

It must be emphasized that the amount of actual refund which a patient may receive is purely a political matter and nothing whatever to do with members of the medical profession. There is no reason, however, why the profession cannot act in an advisory capacity and point out to the Government where it is considered such an anomaly may exist. This has already been done, and corrective measures will be taken.

In common with the other Branches of the Association in Australia, the Branch Council undertook to do its utmost to ensure that there would be no raising of private medical fees by its members on the introduction of the medical benefits scheme. The Federal Council gave an assurance to the Minister to this effect.

Although the desirability of a doctor himself joining a voluntary organization for the purpose of receiving hospital and medical benefits on exactly the same footing as other members of the general public is necessarily a matter which must be left to the discretion of each member, the Branch Council has encouraged doctors to join these societies.

Complimentary Dinner to Sir Henry Newland.

The Branch Council gave a complimentary dinner to Sir Henry Simpson Newland on the occasion of his eightieth birthday, which was celebrated on November 24, 1953. A large number of members of the Branch took the opportunity of being present on this unique occasion, and several interstate guests also attended. It was pleasing to see such a large attendance assembled to honour one who has done so much for the medical profession throughout a very long and notable career.

World Medical Association.

Dr. L. R. Mallen attended meetings of the Council of the World Medical Association, which were held in London and The Hague in August, 1953, and Zurich in April, 1954.

Federal Council of the British Medical Association in Australia.

A meeting of the Federal Council of the British Medical Association in Australia was held in the new Branch premises on Monday, October 26, to Thursday, October 29, inclusive. Members of the Federal Council were entertained at luncheons by the two South Australian delegates, and were given a dinner by the Branch Council. A cocktail party was also given at the residence of the President, Dr. S. J. Douglas, on October 28, 1953.

The distinction of holding the first meeting in the new premises, however, belongs to the Australasian Medical Publishing Company, Limited, the directors of which held a meeting on the afternoon of Sunday, October 25.

A further meeting of the Federal Council was held in Melbourne on March 15 to 18, 1954, the Branch being represented by Dr. L. R. Mallen and Dr. C. O. F. Rieger.

Hospital Policy.

The hospital policy adopted by the State Government regarding the new Queen Elizabeth Hospital established at Woodville has greatly concerned the Branch Council during the past few months. Under strong protest by the Council the Government has adopted a policy whereby the private beds in this institution will be available only to members of the honorary staff, but are "closed" as far as the large majority of general practitioners established in the district are concerned. This is quite contrary to the policy adopted by the Federal Council of the British Medical Association in Australia and means that local practitioners not on the staff will be denied access to the private beds for their maternity cases. One of the main reasons for the establishment of a hospital in the Western Districts was to relieve the acute shortage of maternity accommodation, and it is considered that unless some change can be effected in the present policy, persistence in this attitude can only have the opposite effect and will aggravate the present position as far as midwifery accommodation is concerned. All are agreed that the teaching part of the hospital must be "closed", but can see no valid reason why the non-teaching beds cannot be open to all reputable medical practitioners in accordance with Federal Council policy.

At a very well attended extraordinary meeting of members of the Branch held on May 13 last, it was unanimously resolved:

> That this meeting considers that the closed hospital plan as applied to non-teaching beds is diametrically opposed to established British Medical Association policy of freedom of choice in the doctor-patient relationship and pledges itself to fight the

SOUTH AUSTRALIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION (INCORPORATED).

Income and Expenditure Account for the Year Ended December 31, 1953.

1952.		1953. £ s. d.
£		
1,644	To Staff Salaries and Superannuation	2,063 4 6
164	„ Postages	242 13 1
198	„ Stationery and Printing	248 9 0
22	„ Telephone and Telegrams	57 12 8
86	„ Rent	127 0 4
25	„ Legal Expenses	7 7 0
26	„ Audit and Accountancy	15 15 0
234	„ General Expenses	257 0 0
77	„ Entertainment	136 4 6
32	„ Depreciation	35 14 5
727	„ Net Surplus for Year	849 18 10
		£4,040 19 4

1952.				1953.		
£		£	s. d.	£	s. d.	
5,762	By Gross Subscriptions			6,750	15	3
4,276	City	5,025	16 3			
1,391	Country	1,641	8 0			
94	Students	83	11 0			
2,579	*Less* Deductions			2,781	19	6
922	British Medical Association, London	1,205	13 0			
531	M. J. AUSTRALIA	397	12 6			
	Federal Council:					
675	Capitation Fee	728	14 0			
450	Library Grant	450	0 0			
3,182	„ Net Subscriptions			3,968	15	9
54	„ Interest			65	17	9
—	„ P.B.A. Prescription Pads			6	5	10
				£4,040	19	4

SOUTH AUSTRALIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION (INCORPORATED).

Balance Sheet as at December 31, 1953.

LIABILITIES.	£ s. d.	£ s. d.
Sundry Creditors		43 16 8
General Fund:		
Balance, January 1, 1953	5,276 12 1	
Add Net Surplus for Year	849 18 10	
Add Transfer from Building Fund	121 14 7	
		6,248 5 6
		£6,292 2 2

ASSETS.	£ s. d.	£ s. d.
Fixed Assets: At Cost *less* Depreciation:		
Furniture and Plant	412 19 7	
Delineascope and Projector	7 6 0	
Lister Medals and Dies	2 0 0	
		422 5 7
Current Assets:		
British Medical Hall Company, Limited. Shares at Cost: 192 Preference, 134 Ordinary	3,297 10 0	
Australasian Medical Publishing Company, Limited. At Cost:		
5% Debentures	30 0 0	
3½% Debentures	1,500 0 0	
Advance not yet Converted	77 18 1	
		4,905 8 1
Stocks on Hand	88 9 6	
Sundry Debtors	196 15 3	
		285 4 9
Cash at Bankers *et cetera*:		
National Bank	48 2 6	
Commonwealth Savings Bank	502 10 3	
Savings Bank of South Australia	105 13 11	
Savings Bank, Library	1 17 0	
Cash in Hand	21 0 1	
		679 3 9
		£6,292 2 2

Special Funds and Investments.

	£ s. d.	£ s. d.
Listerian Oration Fund:		
Balance, January 1, 1953	427 11 5	
Add Net Income for Year	10 8	
		428 2 1
Frank S. Hone Memorial Fund:		
Balance, January 1, 1953	664 15 0	
Add Donations and Interest	29 5 9	
	694 0 9	
Less Prizes Awarded	31 10 0	
		662 10 9
Trent Champion de Crespigny Memorial Fund:		
Donations Received		266 1 3
Medical Hall Building Fund:		
Balance, January 1, 1953	1,386 9 1	
Add Interest and Dividends	159 7 6	
	1,545 16 7	
Less Tranfer General Fund	121 14 7	
		1,424 2 0
		£2,780 16 1

	£ s. d.	£ s. d.
Listerian Oration Investments:		
Electricity Trust Debentures	310 0 0	
Savings Bank of South Australia	118 2 1	
		428 2 1
Frank S. Hone Memorial Fund:		
Commonwealth Bond, 3½%, 1959	50 0 0	
South Australia Gas Debenture	300 0 0	
Electricity Trust Debenture	250 0 0	
Savings Bank of South Australia	62 10 9	
		662 10 9
Trent Champion de Crespigny Memorial Fund:		
Savings Bank of South Australia		266 1 3
Medical Hall Building Fund:		
Commonwealth Bonds, 3½%, 1960	200 0 0	
Savings Bank of South Australia	916 17 0	
Savings Bank, General Account	307 5 0	
		1,424 2 0
		£2,780 16 1

F. C. W. DOBBIE, Secretary.

F. L. WALL, Honorary Treasurer.

AUDITORS' REPORT.

We hereby report that we have examined the books and accounts of the South Australian Branch of the British Medical Association Incorporated for the year ended December 31, 1953. In our opinion the above Balance Sheet, together with the Statements of the Special Funds, are properly drawn up so as to exhibit a true and correct view of the affairs of the Branch as at the above date according to the best of our information, the explanations given to us, and as shown by the books produced.

Adelaide, April 15, 1954.

ANNELLS, TILLEY, HUNWICK AND COMPANY,
Chartered Accountants (Aust.).

implementation of the plan with all means at its disposal. The Branch Council is asked first to try and enlist the support of the Faculty of Medicine in this view before taking more drastic measures.

Arrangements have been made for representatives from the Council and the Faculty to meet to discuss the matter.

New Branch Premises.

An important milestone was passed during the year under review by the occupation of the new Branch premises at 80 Brougham Place, North Adelaide. For over a quarter of a century the Branch has had no home of its own and, thanks to the efforts of the directors of the British Medical Hall Company, Limited (by whom the building was purchased in March, 1951), the Branch now has ample office accommodation for many years to come. The provision of a lecture hall on the site has occupied the attention of the directors of the company and the Council of the British Medical Association as a whole on many occasions.

An extraordinary meeting of members of the Branch was held on November 19, 1953, for the purpose of endorsing a resolution of the Council which proposed that annual subscriptions of members be increased by a sum of not more than one guinea for the purpose of assisting the company to meet an annual repayment charge of £800 off the principal sum borrowed from the lending institution to finance the erection of a lecture hall. Following legal advice, the taking of a poll on this question has been deferred.

The ideal of having a lecture hall of its own has not been lost sight of, and the Council hopes that the means may be found whereby this most desirable object, in fact the prime object for which the Hall Company was first formed, may be attained as soon as possible. The existing building, which has been converted into three professional suites and Branch office accommodation, has been given the name of "Newland House", in honour of Sir Henry Simpson Newland.

Frank S. Hone Clinical Prize.

The Frank S. Hone Memorial Prize, which was awarded on the results of the December, 1953, examinations for the degrees of bachelor of medicine and bachelor of surgery, was won by Richard Clayton Bennett.

Honours and Awards.

The Council extends its congratulations to Sir Brian Swift and Sir Harry Wunderly on the bestowal of the honour of Knight Bachelor by Her Majesty the Queen in the New Year honours.

(Signed) SHOLTO J. DOUGLAS,
President.

FINANCIAL STATEMENT.

The financial statement, which is printed herewith, was adopted on the motion of Dr. F. L. Wall, seconded by Dr. C. O. F. Riger.

ELECTION OF OFFICE-BEARERS.

In the absence of other nominations, Dr. Sholto J. Douglas declared Dr. Ivan Jose duly elected as President of the Branch for the ensuing twelve months and invested him with the badge of office. Dr. Jose expressed appreciation of his election.

Dr. Jose announced the election of the following office-bearers for the ensuing year:

Vice-President: Dr. Graham Bennett.

Honorary Treasurer: Dr. F. L. Wall.

Honorary Medical Secretary: Dr. Roger Angove.

Members of Council: Group A—Dr. R. H. Elix, Dr. R. Greenlees, Dr. P. W. Verco. Group B—Dr. M. C. Newland.

Mr. H. P. Tilley, of Annells, Tilley, Hunwick and Company, was appointed auditor for the ensuing year.

RETIRING MEMBERS OF COUNCIL.

On the motion of Dr. C. Yeatman, seconded by Dr. R. H. von der Borch, a motion of thanks was carried to the retiring members of the Council: Dr. B. S. Hanson, Dr. E. P. Cherry, Dr. H. G. Prest, Dr. E. L. Symons and Dr. J. H. Nicholls.

RETIRING PRESIDENT'S ADDRESS.

Dr. Sholto J. Douglas then read his retiring president's address (see page 497).

Dr. L. C. E. Lindon proposed and Dr. C. B. Sangster seconded a vote of thanks to Dr. Douglas for his address. The vote was carried with acclamation, and Dr. Douglas replied.

Out of the Past.

In this column will be published from time to time extracts, taken from medical journals, newspapers, official and historical records, diaries and so on, dealing with events connected with the early medical history of Australia.

INFECTION OF WOUNDS DURING DISSECTION.[1]

To the Editor of *The Sydney Morning Herald*, February 6, 1851.

Dear Sir,

In your issue of today I find a letter from Mr. Cleeve of Charlotte Place in reference to the prevailing epidemic disease in cattle. The object of my communication is merely to draw attention to the error which Mr. Cleeve has run into when he says: *"The danger is in handling the flesh after it becomes putrid."* Every student in a dissecting room is aware that all danger from wounds infected during dissection is over after putrefaction has taken place in the body. The danger consists in the injury prior to disorganization of the animal substance. I may observe that, at this moment, I have a case of phlegmonous erysipelas in my care the result of the disease in question—in company with my friend Dr. Foulis: it has terminated favourably. The treatment adopted was large doses of calomel with equally large doses of opium with free incisions of the arm.

Yours, etc.,
R. M. CARTWRIGHT.

Correspondence.

THE SCHIZOGENIC MOTHER.

SIR: I was pleased to read of Dr. E. J. A. Nuffield's interest in this subject (M. J. AUSTRALIA, August 21, 1954), but I feel that he is allowing his ambivalence over psychogenesis to cloud his thinking about the ætiology of schizophrenia. This is shown by, on the one hand, his affirmation of observing "the frequency of pathological mother-son relationships" in schizophrenia and, on the other hand, his attack on psychopathology's theories about ætiology, together with the design of his investigation, which seems calculated to suggest that schizogenic mothers do not exist.

Dr. Nuffield appears to be confused on basic scientific principles—he states that it is a law of causality that "different effects presuppose different causes". The natural sciences abound with examples to the contrary, a medical one being the various possible effects of inhaling tubercle bacilli. On the other hand, different causes can produce the same effect, as we know only too well with the "effect" of pyrexia. In the ætiology of schizophrenia, it appears that we have both principles operating, that is, several causes for schizophrenia, and at least one of those causes often being responsible for neurosis and psychopathy as well. This is suggested by the work of Wahl (1954), who found that of 392 schizophrenics, 48% suffered rejection or overprotection by one or both parents, 44% before the age of fifteen years suffered the loss of one or both parents by death or separation, and only 12% suffered none of the above. Bowlby (1951) quotes various workers whose 7700 odd cases had broken homes before the age of sixteen years in the following percentages: schizophrenics 40, neurotics 35 to 60, and psychopaths 40 to 65. Also, in my experience, very poor parent-child relationships are common in conversion hysteria. (A parallel in internal medicine is pulmonary consolidation and fibrosis, which can be caused by a variety of agents, of which at least one, the tubercle

[1] From the original in the Mitchell Library, Sydney.

bacillus, can, when inhaled, produce a variety of other lesions.) To my mind, this weakens Dr. Nuffield's idea of a specific cause for schizophrenia.

The above facts, together with the facts that it is often difficult to decide whether a patient is hysteric or schizophrenic and that not many psychiatrists would agree that they are *"fundamentally* different conditions" (my italics), show why Dr. Nuffield's investigation proved so inconclusive. His control group was not a control at all.

What we need are more detailed investigations of the type, degree, duration and timing of parental deprivation and abnormal parent-child relationships in the histories of the mentally ill, using proper controls and, as far as possible, varying one factor at a time.

Yours, etc.,

Wickham Terrace, Brisbane, August 26, 1954. V. L. MATCHETT, D.P.M.

References.

BOWLBY, J. (1951), "Maternal Care and Mental Health", World Health Organization, Geneva, 164.

WAHL, C. W. (1954), "Some Antecedent Factors in the Family Histories of 392 Schizophrenics", *Am. J. Psychiat.*, 110 : 668; abstracted in *Dig. Neurol. Psychiat.*, 22 : 201 (May, 1954).

CONGENITAL CARDIAC CONDITIONS IN THE NEWBORN.

SIR: I agree with Dr. Kate Campbell (August 28, 1954, page 318) that plain radiography of the chests of newly born infants with suspected congenital cardiac lesions is merely to exclude the presence of atelectasis, bronchopneumonia and, I would add, thymic enlargement.

The instantaneous film does not show the actual size of the heart—which varies considerably in size between systole and diastole—and, in any case, the whole body circulation was by the umbilical route but a few hours previously. From the X-ray point of view the diagnosis of congenital cardiac lesions must be delayed until the various chambers of the heart have had time to react to the anomaly of circulation, or—should the infant survive—it may be transferred to the cardiac clinic in early childhood for a complete cardiological investigation. It will be appreciated therefore that radiological investigations of infants in a maternity hospital differ considerably from similar routine investigations in a pædiatric hospital.

Yours, etc.,

147 Macquarie Street, Sydney, August 28, 1954. D. G. MAITLAND.

MEDICAL ETHICS.

SIR: "Should doctors tell the worst?" (*Courier-Mail*, September 11, 1954), a paragraph appearing in the feature "From the Doctor's Diary", raises a matter of ethics which is not without its interest.

In the above instance, the doctor has broken the news to his patient's wife that there is very little hope of her husband's recovery. But what is ethical in the general instance, one in which the death of the bread-winner does not arise?

Although there should be no mistake, and no grounds exist for mistake except ignorance, the correct procedure concerning a doctor's conduct in divulging his patient's condition to a third party is very clearly laid down. The British Medical Association Handbook states:

> A medical practitioner must not discuss the ailments of his patient with a third party without the patient's consent, . . .

and even the Hippocratic Oath enjoins him:

> Whatever, in connection with my professional practice, or not in connection with it, I see or hear in the life of men, which ought not to be spoken of abroad, I will not divulge, as reckoning that all such should be kept secret.

Especially in these days when the patient is tending to be denied his dignity as an individual, there is every need for the profession to adhere strictly to the only permissible standard of ethical conduct, the highest, and to see to it that the oncoming members of the profession do not have to rely on the public Press, nor on slipshod example, for their education in this regard.

In my opinion a practitioner should not give any information about his patient, provided the latter be of age and of sound mind and fit enough to express an opinion, to any third party, including his next of kin, unless the patient has given his permission. If this is the correct advice to give a young resident medical officer or registrar in a public hospital, and I believe that it is, then it applies equally in private practice. And it applies in all regards, irrespective of the nature of the patient's ailment, and irrespective of its prognosis.

Moreover, it might not be out of season to add a final sentence from the British Medical Association Handbook: "Gossip by practitioners respecting the cases under their care should be rigorously avoided."

Yours, etc.,

NICOMACHEAN.

Brisbane, September 11, 1954.

HYPODERMIC NEEDLES.

SIR: Last week while giving a hypodermic injection the needle broke off at the hilt. I had to remove the needle under local anæsthesia. The moral of the story is that I always use needles one inch long so that a portion of the needle will be protruding from the puncture wound if the needle should break. However, in this case, owing to a temporary shortage, I had been supplied with needles half an inch long only. I can see no advantage to the patient in using an hypodermic needle less than an inch long, and there are certainly plenty of disadvantages. Would it be a reasonable suggestion for the British Medical Association to negotiate with manufacturers to produce needles of one inch minimum length?

Yours, etc.,

Goomalling, Western Australia, August 25, 1954. SHAKESPEAR COOKE.

Naval, Military and Air Force.

APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Number 53, of August 26, 1954.

AUSTRALIAN MILITARY FORCES.

Royal Australian Army Medical Corps.

To be Honorary Surgeon to the Queen: Colonel Robert Officer, M.B., B.S., F.R.C.S., F.R.A.C.S., Royal Australian Army Medical Corps.

Australian Regular Army.

Royal Australian Army Medical Corps.

2/40173 Honorary Captain H. T. Gage is appointed from the Reserve of Officers, and to be Captain, 9th July, 1954, with a Short Service Commission for a period of one year.

Citizen Military Forces.

Western Command: Fifth Military District.

Royal Australian Army Medical Corps (Medical).—5/26459 Captain (provisionally) V. T. White ceases to be seconded whilst in the United Kingdom, 27th June, 1954.

Reserve Citizen Military Forces.

Royal Australian Army Medical Corps.

1st Military District.—To be Honorary Captain, 16th July, 1954: Keith Byron Harveyson, Bartholomew Klug and Ronald Henry James.

2nd Military District.—To be Honorary Captain, 28th June, 1954: Charles Bruno da Roza.

3rd Military District.—To be Honorary Captains: John

Grant Gorman, 22nd May, 1954; Barry Roy Knox McKeon, 23rd May, 1954; Edward Shorland Cole, 1st June, 1954; Thomas Tyrrel King and John Stuart Pettit, 20th June, 1954; and Malcolm Andrew McKenzie, 1st July, 1954.

6th Military District.—To be Honorary Captain, 15th July, 1954: Roger John Connolly.—(Ex. Min. No. 157—Approved 18th August, 1954.)

Post-Graduate Work.

THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

Week-End Course at Parramatta.

THE Post-Graduate Committee in Medicine in the University of Sydney, in conjunction with the Central Western Medical Association, will hold a week-end course at the Parramatta District Hospital on Saturday and Sunday, October 16 and 17, 1954. The programme is as follows:

Saturday, October 16: 2 p.m., registration; 2.30 p.m., "Traumatic Surgery: Some General and Particular Aspects", Dr. Norman Wyndham; 4 p.m., "Acute Surgery of the Upper Abdomen", Dr. Norman Wyndham.

Sunday, October 17: 10 a.m., "Rh Factor—Practical Application", Dr. Mary Heseltine; 11.30 a.m., "The Value of Endometrial and Cervical Biopsies", Dr. Mary Heseltine; 2 p.m., "Significant Changes in Therapeutics", Dr. A. W. Morrow; 3.30 p.m., "Hepatitis and Cirrhosis of the Liver", Dr. A. W. Morrow.

The fee for the course will be £3 3s. Those wishing to attend are requested to notify Dr. C. A. McDermott, supervisor of the course, 8 Carlton Street, Granville. Telephone: YU 1570.

Week-End Course in Cancer at Newcastle.

The Post-Graduate Committee in Medicine in the University of Sydney, in conjunction with the Central Northern Medical Association, will hold a week-end course in cancer at the Royal Newcastle Hospital on Saturday and Sunday, October 23 and 24, 1954, during the visit of Professor R. McWhirter, F.R.C.S., F.F.R., who is Professor of Medical Radiology, University of Edinburgh, and Director of the Radiotherapy Department, Royal Infirmary, Edinburgh. The programme is as follows:

Saturday, October 23, at the New Lecture Hall, The Royal Newcastle Hospital: 2 p.m., registration; 2.15 p.m. to 5 p.m., "Lymphomata", Dr. C. R. Bickerton Blackburn, "Early Diagnosis and Treatment of Carcinoma of the Breast", Professor R. McWhirter.

Sunday, October 24, at the New Lecture Hall, The Royal Newcastle Hospital: 10 a.m. to 1 p.m., "Pathology of Malignant Disease", Dr. Steel Douglas, "Cancer of the Cervix", Dr. G. G. Stening; 2 p.m. to 4 p.m., "Blood Dyscrasias", Dr. C. R. Bickerton Blackburn, "Importance of Early Diagnosis and Treatment of Cancer", Professor R. McWhirter.

Fee for attendance at the course will be £3 3s. Those wishing to attend are requested to notify Dr. H. W. Rundle, Honorary Secretary, Central Northern Medical Association, Chatham Road, Broadmeadow, as soon as possible.

Australian Medical Board Proceedings.

NEW SOUTH WALES.

THE following have been registered, pursuant to the provisions of the *Medical Practitioners Act*, 1938-1953, as duly qualified medical practitioners: Ahern, Andrew Patrick, M.B., B.S., 1953 (Univ. Melbourne); Efron, Lionel, M.B., B.S., 1953 (Univ. Melbourne); Handley, Harold Arthur, M.B., B.S., 1953 (Univ. Adelaide); Harley, Brian Alfred Erskine, L.R.C.P. (London), 1933, M.R.C.S. (England), 1933, D.O., R.C.P. and S. (England), 1954.

The following additional qualifications have been registered: Boughton, Clement Russell (M.B., B.S., 1950, Univ. Sydney), M.R.A.C.P., 1954; England, Theodora Margaret (M.B., 1925, Univ. Sydney), D.P.M., 1938, Ch.M., 1954 (Univ.

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED SEPTEMBER 4, 1954.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	4	5(3)	5(3)	..	..	..	..	..	14
Amœbiasis	..	..	..	..	1	..	..	..	1
Ancylostomiasis	..	..	1(1)	..	..	..	1	..	2
Anthrax	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..
Brucellosis	1(1)	..	..	..	..	..	..	..	1
Cholera	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus)	..	2(1)	..	..	1	..	..	..	3
Dengue	..	..	..	..	..	..	..	..	..
Diarrhœa (Infantile)	1	12(12)	9(9)	..	..	..	..	..	22
Diphtheria	5(3)	1(1)	3(1)	..	..	..	..	..	9
Dysentery (Bacillary)	..	..	1(1)	..	1(1)	..	..	..	2
Encephalitis	..	..	..	..	..	..	..	1	1
Filariasis	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice	..	..	..	..	..	..	..	..	..
Hydatid	..	..	..	..	..	..	..	..	..
Infective Hepatitis	30(15)	18(8)	..	..	1(1)	..	1	1	51
Lead Poisoning	..	..	..	..	..	..	..	..	..
Leprosy	..	..	..	..	1	..	1	..	2
Leptospirosis	..	..	2	..	..	..	..	..	2
Malaria	..	3(1)	..	..	2	..	..	..	5
Meningococcal Infection	7(2)	1(1)	3(3)	..	..	..	..	..	11
Ophthalmia	..	..	..	..	..	..	..	..	..
Ornithosis	..	..	..	..	..	..	..	..	..
Paratyphoid	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	5	10(7)	..	..	..	..	..	..	15
Puerperal Fever	..	..	..	..	..	..	..	..	..
Rubella	..	14(8)	..	..	..	..	..	..	14
Salmonella Infection	..	..	..	..	..	..	..	..	..
Scarlet Fever	13(11)	29(15)	3(2)	13(10)	1(1)	..	..	..	59
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	..	..	1(1)	..	..	..	..	..	1
Trachoma	..	..	..	..	2	..	..	..	2
Trichinosis	..	..	..	..	..	..	..	..	..
Tuberculosis	40(28)	21(15)	24(15)	5(4)	9(7)	..	1	..	100
Typhoid Fever	..	..	1	..	1(1)	..	..	..	2
Typhus (Flea-, Mite- and Tick-borne)	..	..	..	..	..	..	..	..	..
Typhus (Louse-borne)	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] Figures in parentheses are those for the metropolitan area.

Sydney); Farrar, James Martindale (M.B., B.S., 1943, Univ. Sydney), D.G.O., 1948 (Univ. Sydney), M.R.C.O.G., 1951, M.R.C.P. (London), 1952; Hooper, Francis Maxwell (M.B., B.S., 1945, Univ. Sydney, F.F.R., 1952), M.C.R.A., 1952; Macintosh, Laurel Jean (M.B., B.S., 1946, Univ. Sydney), D.O., R.C.P. and S. (England), 1954; Pelly, Anthony D'Arcy (M.B., B.S., 1954, Univ. Sydney), B.Sc. (Med.), 1951 (Univ. Sydney); Quoyle, John Charles Joseph (M.B., B.S., 1948, Univ. Sydney), M.R.A.C.P., 1954; Ross, Heather June Sylvia (M.B., B.S., 1942, Univ. Sydney), D.(Obst.)R.C.O.G., 1948, M.R.C.O.G., 1951; Proust, Anthony John (M.B., B.S., 1948, Univ. Sydney), M.R.C.P. (London), 1954, M.R.C.P. (Edinburgh), 1954.

Notice.

LECTURE AT SYDNEY HOSPITAL.

MR. RODNEY MAINGOT, McIlrath Guest Professor of Surgery at the Royal Prince Alfred Hospital, will deliver a lecture on "Surgery of the Pancreas" in the Maitland Lecture Hall at Sydney Hospital on Tuesday, September 28, 1954, at 8.15 p.m. All members of the medical profession are invited to attend.

CONFERENCE ON SILICOSIS AND OCCUPATIONAL CHEST DISEASES.

A CONFERENCE on silicosis and occupational chest diseases, jointly sponsored by the McIntyre Research Foundation of Toronto, Canada, and the Saranac Laboratory of Saranac Lake, New York, will be held on February 7, 8 and 9, 1955, at Saranac Lake. Papers to be presented will report on original work conducted or sponsored by either the McIntyre Research Foundation or the Saranac Laboratory. In addition there will be papers presented by guest lecturers. Doctors, scientists, and businessmen concerned with the problems of occupational chest diseases in all parts of the United States, Canada and overseas are invited to attend. All communications concerning the conference should be addressed to Mr. Norman R. Sturgis, junior, Saranac Laboratory, Saranac Lake, New York.

Nominations and Elections.

THE undermentioned have applied for election as members of the South Australian Branch of the British Medical Association:

Harris, David John, M.B., B.S., 1952 (Univ. Adelaide), Summit Road, Crafers, South Australia.

Mackie, Dean Graham, M.B., B.S., 1954 (Univ. Adelaide) (qualified 1953), 26 Burke Street, Tusmore, South Australia.

Richards, James Ross, M.B., B.S., 1954 (Univ. Adelaide) (qualified 1953), Box 2, Nairne, South Australia.

Dow, Lorna Ruth, M.B., B.S., 1954 (Univ. Adelaide) (qualified 1953), 7 Elizabeth Street, Clapham, South Australia.

The undermentioned have been elected as members of the South Australian Branch of the British Medical Association: Lawson, William Scott, M.B., B.S., 1954 (Univ. Adelaide) (qualified 1953); Siglin, Max, M.B., B.S., 1954 (Univ. Adelaide) (qualified 1953).

Medical Appointments.

Dr. R. F. Condon has been appointed government medical officer at Inglewood, Queensland.

Sir Brian Swift, Dr. R. F. Matters and Dr. J. R. S. G. Beard have been appointed honorary consulting obstetricians at The Queen Elizabeth Hospital, Adelaide.

Dr. M. G. Maguire has been appointed surgical registrar at the Royal Adelaide Hospital.

Dr. E. C. Hallett has been appointed registrar in anæsthesia at the Royal Adelaide Hospital.

Dr. M. A. Wheaton has been appointed registrar (maternity section) at The Queen Elizabeth Hospital, Adelaide.

Deaths.

THE following death has been announced:

JULIUS.—Solomon Julius, on September 9, 1954, at Brisbane.

Diary for the Month.

SEPT. 28.—New South Wales Branch, B.M.A.: Ethics Committee.
SEPT. 30.—New South Wales Branch, B.M.A.: Branch Meeting.
OCT. 1.—New South Wales Branch, B.M.A.: Annual Meeting of Delegates.
OCT. 1.—Queensland Branch, B.M.A.: General Meeting (Jackson Lecture).
OCT. 5.—New South Wales Branch, B.M.A.: Council Quarterly.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales.

Queensland Branch (Honorary Secretary, B.M.A. House, 225 Wickham Terrace, Brisbane, B17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205 Saint George's Terrace, Perth): Norseman Hospital; all Contract Practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

Tasmania: Part-time specialist appointments for the north-west coast of Tasmania.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

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